BRITISH STANDARD

BS 835:1973

Incorporating Amendment No. 1

Specification for

Asbestos-cement flue pipes and fittings, heavy quality

Confirmed January 2010

UDC 621.643.2 – 183.2:666.961:697.81

Co-operating organizations

The Asbestos and Asbestos-Cement Building Products Industry Standards Committee, under whose supervision this British Standard was prepared consists of representatives of the following Government departments and scientific and industrial organizations:

Asbestos Cement Manufacturers' Association*
Concrete Society
Department of the Environment — Building Research Station
Department of the Environment, Public Buildings and Works*
Incorporated Association of Architects and Surveyors
Institution of Civil Engineers
Institution of Municipal Engineers*
Institution of Structural Engineers
National Federation of Builders' and Plumbers' Merchants
National Federation of Building Trades Employers
National Federation of Roofing Contractors
Royal Institute of British Architects*
Royal Institution of Chartered Surveyors
Royal Society of Health
An individual manufacturer*

The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

British Gas Corporation
Institute of Plumbing
Institution of Gas Engineers
National Federation of Plumbers and Domestic Heating Engineers
Society of British Gas Industries
Individual manufacturers

This British Standard, having been approved by the Fibre Reinforced Cement Products Standards Committee, was published under the authority of the Executive Board on 30 March 1973

First published March 1939
First revision June 1945
Second revision October 1948
Third revision December 1954
Fourth revision August 1959
Fifth revision March 1967
Sixth revision (metric) March 1973

The following BSI references relate to the work on this standard:
Committee reference FRB/3
Draft for approval 71/11578

ISBN 0 580 07016 6

Amendments issued since publication

Amd. No.	Date of issue	Comments
5964	April 1989	Indicated by a sideline in the margin

Contents

Foreword

This British Standard has been prepared under the authority of the Fibre Reinforced Cement Products Standards Committee. It has been revised in metric terms as part of that committee's programme of metrication and supersedes the 1967 edition. The metric values are given in SI units. For further information on SI units reference should be made to BS 3763, "*The International System of units (SI)*".

Recommendations on methods of fixing and jointing flues for gas appliances are given in the appropriate sections of CP 337, "*Flues for gas appliances up to 1 50 000 Btu/h rating*".

Where such pipes are used in conjunction with incinerators having a refuse combustion chamber capacity exceeding 0.03 m^3 but not exceeding 0.09 m^3 or with solid smokeless fuel burning or oil burning appliances, it is essential that the first 1 800 mm of flue pipe leading from the outlet is made of cast iron complying with the requirements of BS 41, "*Cast iron spigot and socket flue or smoke pipes and fittings*", or of mild steel not less than 5 mm thick. An asbestos-cement socket for connecting asbestos-cement pipes to metal pipes of similar internal diameter is illustrated in this standard. For oil burning appliances, however, where the flue temperature is unlikely to exceed 260 °C such use of a metal flue for the first 1 800 mm length may not be necessary and the appropriate building authority should be consulted.

The detailed description of the apparatus and procedures for the testing of flue pipes and fittings have been omitted from this standard as these are given in the appropriate sections of BS 4624, "*Methods of test for asbestos and asbestos-cement building products*".

There are several different designs of terminals available and approved by the British Gas Corporation for use with flues for gas-fired appliances. The British Gas Corporation should be consulted as to suitable designs of terminals for this purpose.

The clause defining sampling, inspection and acceptance has been amended to agree with the description standardized in ISO/R 390, "*Sampling and inspection of asbestos-cement products*", drawn up by Technical Committee 77 of the International Organization for Standardization responsible for products in asbestos-cement.

The recommendations for the co-ordination of dimensions in building are embodied, where appropriate, in this standard; the terminology is in accordance with the definitions in BS 6100-1.5.1.

The manufacture of all asbestos based products is covered by the requirements of the Control of Asbestos at Work Regulations 1987, introduced on 1 March 1988. These set out comprehensive provisions covering work activities involving exposure to asbestos. Advice on how to comply with these regulations can be obtained from the manufacturers of the material, from the Asbestos Information Centre, St. Andrew's House, 22-28 High Street, Epsom, Surrey KT19 8AH, from the local area office of the Health and Safety Executive or from the Environmental Health Department of the Local Authority.

WARNING. Breathing asbestos dust is dangerous to health and precautions have to be taken during the manufacture and use of these products.

Particular note has to be taken of the Asbestos Products (Safety) Regulations 1985, made under the Consumer Safety Act 1978 and of the Asbestos (Prohibitions) Regulations 1985[1)] made under the Health and Safety at Work etc. Act 1974, which prohibit the supply of products containing amosite or crocidolite and set out requirements for the labelling of all products containing asbestos.

All the above legislation implements European Directives.

[1)] Parallel regulations for Northern Ireland came into force on 6 March 1986.

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 to iv, pages 1 to 16, 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.

blank

1 Scope

This British Standard covers heavy quality asbestos-cement flue pipes and fittings, of diameters from 75 mm to 600 mm inclusive, with or without internal acid-resisting coatings, intended for use with the following types of appliances:

1) solid smokeless fuel burning stoves (output rating not exceeding 45 kW)

2) oil-burning appliances (output rating not exceeding 45 kW)

3) gas fired appliances

4) incinerators (not exceeding 0.09 m^3 in capacity).

It is important that there shall be no direct flame impingement on the walls of the flue pipes.

These pipes and fittings may also be used for ventilation and other purposes. Where it is anticipated that the material will be subjected to a flue temperature exceeding 260 °C the advice of manufacturers should be sought.

NOTE 1 For flue pipes and fittings of diameters of 150 mm and under, for use with gas-fired appliances having an input rating not exceeding 45 kW, see BS 567.
NOTE 2 The titles of the British Standards referred to in this standard are listed on page 16.

2 Composition

Asbestos-cement flue pipes and fittings shall be made from a close and homogeneous mixture consisting essentially of a suitable inorganic hydraulic binder[2)], asbestos fibre (except fibres of crocidolite and amosite which are not permitted) and water, and shall exclude any materials liable to cause ultimate deterioration in the quality of the pipes and fittings. They shall be left in their natural colour, or colouring matter conforming to the requirements of BS 1014 shall be added in the composition.

NOTE Pipes and fittings may also receive adherent coloured or uncoloured coatings on their surfaces.

3 Manufacture

The material used in the manufacture of the pipes and fittings shall be intimately mixed by mechanical means.

The finished pipes and fittings shall be smooth and of good appearance, their inner and outer surfaces being as nearly as practicable concentric; the ends of the pipes or fittings shall be finished square to their axes. They shall be in all respects sound, homogeneous and free from excrescences or other imperfections detrimental to their performance.

4 Dimensions and tolerances

4.1 Dimensions. Dimensions of pipes and fittings shall be as shown in Figure 1 to Figure 10 and in Table 1 to Table 10.

4.2 Nominal length. The nominal length of pipes shall be the total length exclusive of the internal depth of a socket.

4.3 Nominal size. The nominal size of a pipe or fitting shall be measured in terms of its internal diameter.

4.4 Spigots and sockets of pipes and fittings. Spigots and sockets of pipes and fittings shall conform to the dimensions laid down in Table 1. In all cases dimension *C* in Table 1 shall be the minimum internal diameter for the socket.

4.5 Tolerances. Permissible variations in length, thickness, internal and external diameter, are shown in Table 11.

5 Standard tests

5.1 Straightness, regularity of thickness, and diameter. The deviation of straightness of pipes when tested in the manner described in BS 4624 shall not be more than 3 mm in any 600 mm and not more than 6 mm in 1 800 mm.

The regularity of thickness and diameter when tested with gauges and callipers provided and maintained by the manufacturer in proper condition for the purpose shall be in accordance with Table 11.

5.2 Water tightness. Pipes and fittings, when subjected to a test of 400 mbar internal hydraulic pressure by the method described in BS 4624 shall not show any defects.

5.3 Bursting strength. The strength of the pipes shall be such that, when tested in the manner described in BS 4624 they will withstand the minimum hydraulic pressure shown in Table 12.

5.4 Water absorption. The mean water absorption of pipes and fittings, when specimens are tested in the manner described in BS 4624 shall not exceed 30 % of the dry weight of the material.

5.5 Chemical resistance. The mean amount of acetic acid neutralized, when specimens selected from pipes and fittings are tested in the manner described in BS 4624 shall not exceed 0.115 g/cm^2.

6 Protection and means of checking it

6.1 Where required and taking into consideration the purpose of the installation, a suitable protective coating as agreed between the user and the manufacturer shall be applied.

[2)] Cement complying with the requirements of BS 12 satisfies this requirement.

When such a coating is required, the whole of the internal surface, including the socket and edge of the spigot end, shall be coated.

6.2 In those instances where the protective coating is required for pipes and fittings for flueing gas-fired appliances (see CP 337), it shall be identifiable by colour and the following additional tests shall apply.

6.2.1 Test for acid resistance (24 h). When tested in accordance with the method described in BS 4624 there shall be no peeling or formation of white deposits.

6.2.2 Test for acid resistance (100 h). When tested in accordance with the method described in BS 4624 there shall be no peeling or formation of white deposits.

6.2.3 Test for temperature susceptibility. When tested in accordance with the method described in BS 4624 there shall be no visual signs of cracking or of significant blistering of the internal coating.

6.2.4 Test of adhesion. When tested in accordance with the method described in BS 4624 there shall be no flaking or lifting of the exposed edges of the coating.

7 Sampling and arrangements for proving samples

7.1 All items in a consignment shall meet the requirements of Clauses **2**, **3**, **4**, **5** and, where applicable, **6**.

7.2 If the purchaser requires the manufacturer to test the products in a particular consignment in accordance with Clauses **5** and **6**, this shall be stated in the enquiry and order. Specimens for testing for compliance with these clauses shall be selected by sampling in accordance with Appendix A. If tests are to be made in the presence of the purchaser, or his representative, this also shall be stated.

7.3 When the number of specimens required to be tested exceeds the numbers laid down in Table 13 the cost of such additional tests, unless otherwise stipulated, shall be borne:

1) by the manufacturer if the results show that the material does not comply with the specification,

2) by the purchaser if the results show that the material complies with the specification.

7.4 Independent tests may be carried out by agreement between the manufacturer and the purchaser, and attention is drawn to the Note following Clause **8**.

8 Marking

Every pipe and fitting shall be marked legibly with the following:

1) the manufacturer's name or trade mark,

2) nominal size of the pipe or fitting,

3) the number of this British Standard, i.e. BS 835.

NOTE Attention is drawn to certification facilities offered by BSI; see the inside back cover of this standard.

Appendix A Method of sampling

A.1 Division of a consignment

Divide the consignment into inspection lots.

A.1.1 Homogeneous consignments. Homogeneous consignments are divided in the following manner.

1) Any homogeneous consignment (or sub-consignment), (see **A.1.2**), is divided by the manufacturer into inspection lots, the maximum size of which is given in Table 13.

2) Any fraction of a consignment remaining after taking out the highest possible number of maximum inspection lots and any homogeneous consignment or sub-consignment smaller than the maximum lot size, form an inspection lot if larger than the minimum lot size given in Table 13.

3) Consignments or fractions of consignments smaller than the minimum lot size given in Table 13 are not submitted for sampling and testing.

A.1.2 Non-homogeneous consignments. Any consignment which is known to be or is expected to be non-homogeneous as regards any of the properties to be tested by sampling is divided by the manufacturer into assumed homogeneous sub-consignments prior to the division into inspection lots, as in **A.1.1** above.

A.2 Sampling

A.2.1 From each inspection lot [see **A.1.1** 1) and 2) above] the purchaser may draw a sample, the size of which is indicated in Table 13 [see **A.1.1** 2)].

A.2.2 The entry to Table 13 is the number of units of products in the inspection lot (Column 1), the sample size being indicated in Column 2.

A.2.3 When test pieces are cut from the units of the sample, the cutting is carried out by the manufacturer in the presence of the purchaser.

A.2.4 The sample size is appropriately multiplied so as to secure for each test a number of test pieces equal to the sample size (see **A.2.2**). From one unit of a sample one test piece only is cut for a particular test, but for different tests the relative test pieces may be cut from the same unit of the sample.

A.3 Determination of acceptability of inspection lots. Inspection by attributes

A.3.1 When there are no non-conforming units found in the sample, the inspection lot from which the sample was drawn is considered acceptable.

A.3.2 When the number of non-conforming units found in the sample is equal to or greater than the rejection number Re_1 indicated in Column 4 of Table 13 this may justify rejection of the inspection lot.

A.3.3 When the number of non-conforming units found in the sample lies between the acceptance number and the rejection number (Column 3 and 4 of Table 13), a second sample of the same size as the initial sample (see **A.2.2**) is drawn and examined.

A.3.3.1 Inspect the second sample as indicated in **A.2.3** and **A.2.4**.

A.3.3.2 Total the number of non-conforming units found in the initial and in the second samples.

A.3.3.3 If the total number of non-conforming units is equal to or less than the acceptance number Ac_2 indicated in Column 5 of Table 13, the inspection lot is considered acceptable.

A.3.3.4 If the total number of non-conforming units is equal to or greater than the second rejection number Re_2 indicated in Column 6 of Table 13, this may justify rejection of the inspection lot.

A.3.3.5 When this standard calls for more than one property to be tested the second sample taken (see **A.3.3**) should only be inspected in accordance with those tests which at the inspection of the initial sample gave numbers of non-conforming units between the acceptance number Ac_1 and the rejection number Re_1.

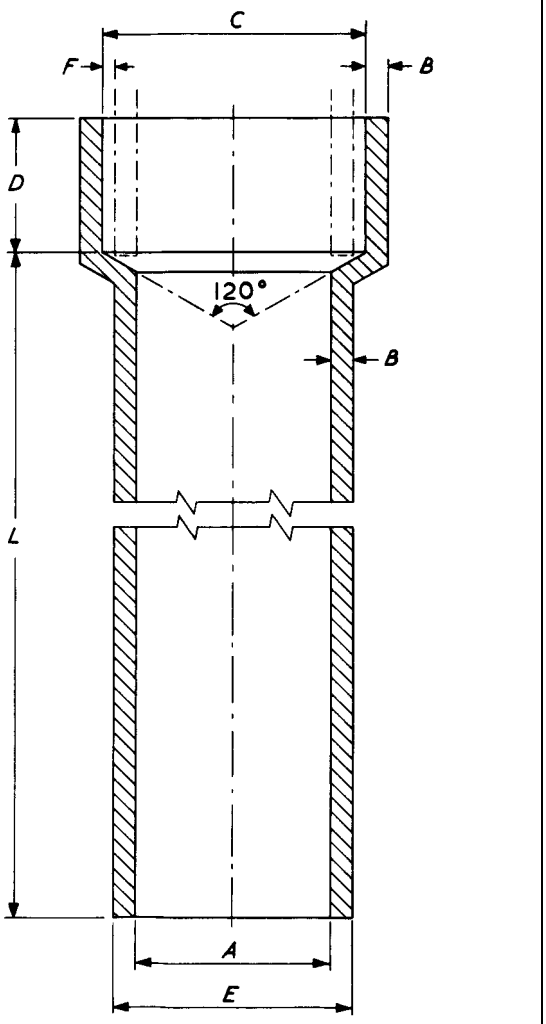

Figure 1 — Straight pipe

Table 1 — Straight pipes

All sizes in millimetres

Dia. *A*	**75**	**100**	**125**	**150**	**175**	**200**	**225**	**250**	**300**	**375**	**450**	**600**
B	7.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	12.0	12.0	12.0	12.0
C	102	130	159	184	213	238	263	288	344	419	494	644
D	51	64	76	89	102	102	102	102	102	102	102	102
E	90	118	143	168	193	218	243	268	324	399	474	624
F	6	6	8	8	10	10	10	10	10	10	10	10
L	900, 1 200 and 1 800 in all sizes									900 and 1 200 in all sizes.		

NOTE 1 The dimensions for sockets and spigots are standard for all fittings.
NOTE 2 For dimensional tolerances, see Table 11.

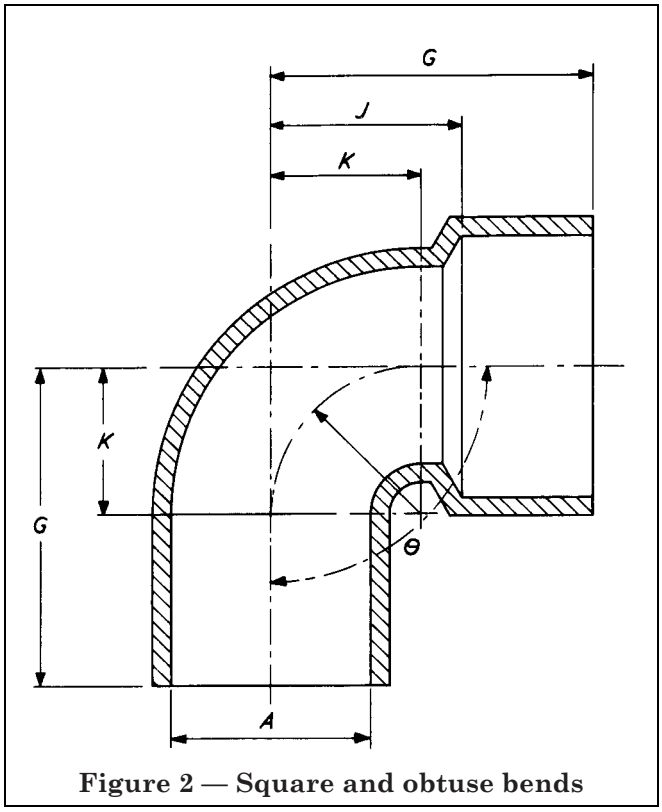

Figure 2 — Square and obtuse bends

Table 2 — Square and obtuse bends

All sizes in millimetres

Standard range of angles θ	Dia. A	75	100	125	150	175	200	225	250	300	375	450	600
90°, 100°, 110°, 120°, 135°	G	124	159	190	222	254	273	292	311	356	413	470	584
	J	73	95	114	133	152	171	190	210	254	311	368	483
	K	57	76	95	114	133	152	171	190	229	286	343	457

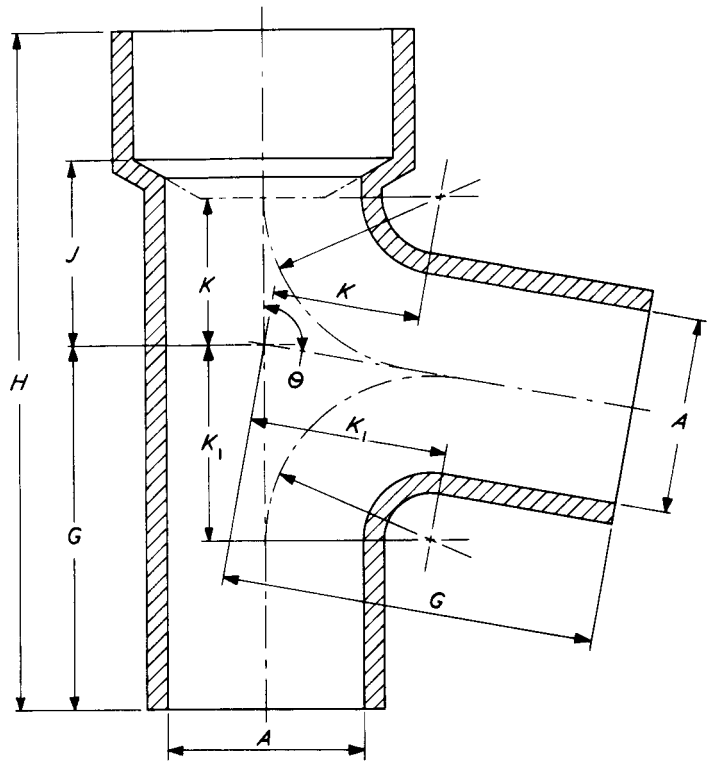

Figure 3 — Equal square and obtuse tees

Table 3 — Equal square and obtuse tees

All sizes in millimetres

	Dia. A		75	100	125	150	175	200	225	250	300	375	450	600
Constant for all angles	J		73	95	114	133	152	171	190	210	254	311	368	483
	K		57	76	95	114	133	152	171	190	229	266	343	457
Angle θ	90°	G	124	159	190	222	254	273	292	311	356	413	470	584
		H	248	317	381	444	508	546	584	622	711	825	940	1 168
		K_1	57	76	95	114	133	152	171	190	229	286	343	457
	100°	G	143	184	222	260	298	324	349	375	432	508	584	737
		H	267	343	413	483	552	597	641	686	787	921	1 054	1 321
		K_1	76	102	127	152	178	203	229	254	305	381	457	610
	110°	G	162	210	254	298	343	375	406	438	508	603	698	889
		H	286	368	444	521	597	648	698	749	864	1 016	1 168	1 473
		K_1	95	127	159	190	222	254	286	317	381	476	571	762
	120°	G	181	235	286	336	387	425	463	502	584	698	813	1 041
		H	305	394	476	559	641	698	756	813	940	1 111	1 283	1 626
		K_1	114	152	190	229	267	305	343	381	457	571	686	914
	135°	G	200	260	317	375	432	476	521	565	660	794	927	1 194
		H	324	419	508	597	686	749	813	876	1 016	1 206	1 397	1 778
		K_1	133	178	222	267	311	356	400	444	533	667	800	1 067

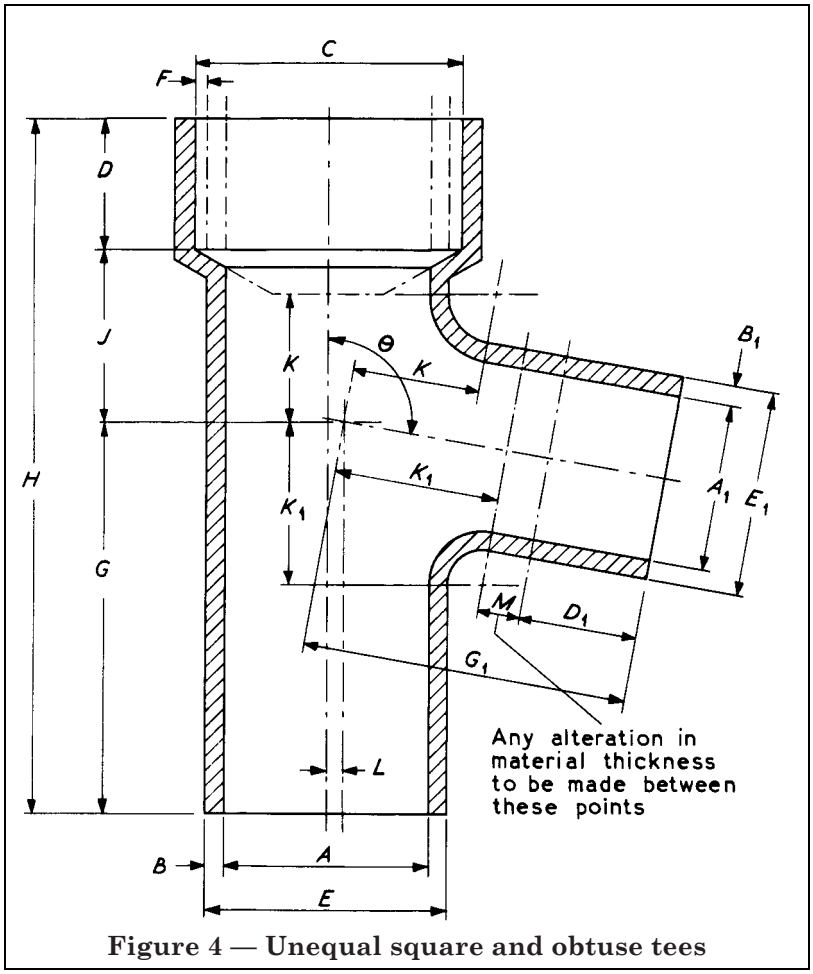

Figure 4 — Unequal square and obtuse tees

Table 4 — Unequal square and obtuse tees

All sizes in millimetres

		Dia. A	450					375				300			250		175
		Dia. A_1	125	175	250	300	375	125	175	250	300	125	175	250	125	175	125
Constant for all angles		B	12	12	12	12	12	12	12	12	12	12	12	12	9	9	9
		B_1	9	9	9	12	12	9	9	9	12	9	9	9	9	9	9
		C	494	494	494	494	494	419	419	419	419	344	344	344	288	288	213
		D	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102
		D_1	76	102	102	102	102	76	102	102	102	76	102	102	76	102	76
		E	474	474	474	474	474	399	399	399	399	324	324	324	268	268	193
		E_1	143	193	268	324	399	143	193	264	324	143	193	268	143	193	143
		F	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		J	121	159	216	254	311	121	159	216	254	121	159	216	114	152	114
		K	95	133	190	229	286	95	133	190	229	95	133	190	95	133	95
		L	165	140	102	76	38	127	102	63	38	89	63	25	63	38	25
		M	19	19	19	25	25	19	19	19	25	19	19	19	19	19	19
Angle θ	90°	G	717	679	622	584	527	603	565	508	470	489	451	394	406	368	292
		G_1	190	254	311	356	413	190	254	311	356	190	254	311	190	254	190
		H	940	940	940	940	940	825	825	825	825	711	711	711	622	622	508
		K_1	95	133	190	229	286	95	133	190	229	95	133	190	95	133	95
	100°	G	832	794	737	698	641	698	660	603	565	565	527	470	470	432	336
		G_1	222	298	375	432	508	222	298	375	432	222	298	375	222	298	222
		H	1 054	1 054	1 054	1 054	1 054	921	921	921	921	787	787	787	686	686	552
		K_1	127	178	254	305	381	127	178	254	305	127	178	254	127	178	127
	110°	G	946	908	851	813	756	794	756	698	660	641	603	546	533	495	381
		G_1	254	343	438	508	603	254	343	438	508	254	343	438	254	343	254
		H	1 168	1 168	1 168	1 168	1 168	1 016	1 016	1 016	1 016	864	864	864	749	749	597
		K_1	159	222	317	381	476	159	222	317	381	159	222	317	159	222	159
	120°	G	1 060	1 022	965	927	870	889	851	794	756	717	679	622	597	559	425
		G_1	286	387	502	584	699	286	387	502	584	286	387	502	286	387	286
		H	1 283	1 283	1 283	1 283	1 283	1 111	1 111	1 111	1 111	940	940	940	813	813	641
		K_1	190	267	381	457	571	190	267	381	457	190	267	381	190	267	190
	135°	G	1 175	1 137	1 079	1 041	984	984	946	889	851	794	756	698	660	622	470
		G_1	317	432	565	660	794	317	432	565	660	317	432	565	317	432	317
		H	1 397	1 397	1 397	1 397	1 397	1 206	1 206	1 206	1 206	1 016	1 016	1 016	876	876	286
		K_1	222	311	444	533	667	222	311	444	533	222	311	444	222	311	222

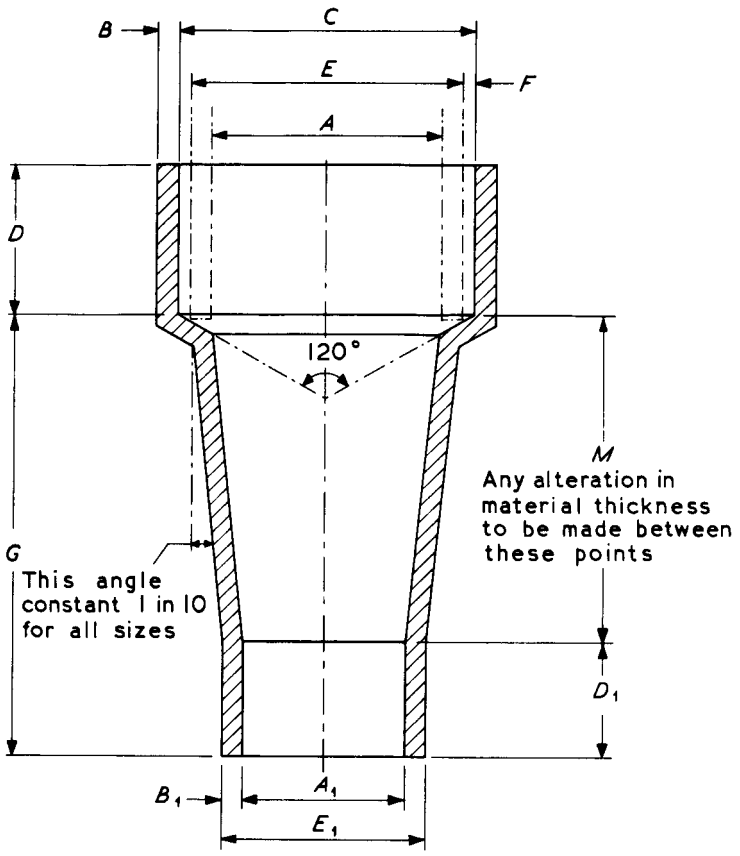

Figure 5 — Taper piece

Table 5 — Taper pieces

All sizes in millimetres

Dia. A	600			450				375				300					250				
Dia. A_1	300	375	450	225	250	300	375	200	225	250	300	150	175	200	225	250	125	150	175	200	225
B	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	9	9	9	9	9
B_1	12	12	12	9	9	12	12	9	9	9	12	9	9	9	9	9	9	9	9	9	9
C	644	644	644	494	494	494	494	419	419	419	419	344	344	344	344	344	288	288	288	288	288
D	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102
D_1	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	76	89	102	102	102
E	624	624	624	474	474	474	474	399	399	399	399	324	324	324	324	324	268	268	268	268	268
E_1	324	399	474	243	268	324	399	218	243	268	324	168	193	218	243	268	143	168	193	218	243
F	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
G	1 626	1 245	864	1 245	1 118	864	483	991	864	737	483	851	864	610	483	356	711	597	483	356	229
M	1 524	1 143	762	1 143	1 016	762	381	889	762	635	381	762	635	508	381	254	635	508	381	254	127

Dia. A	225				200				175			150			125		100
Dia. A_1	125	150	175	200	100	125	150	175	100	125	150	75	100	125	75	100	75
B	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
B_1	9	9	9	9	9	9	9	9	9	9	9	7.5	9	9	7.5	9	7.5
C	263	263	263	263	238	238	238	238	213	213	213	184	184	184	159	159	130
D	102	102	102	102	102	102	102	102	102	102	102	89	89	89	76	76	63
D_1	76	89	102	102	63	76	89	102	63	76	89	51	63	76	51	63	51
E	243	243	243	243	218	218	218	218	193	193	193	168	168	168	143	143	118
E_1	143	168	193	218	118	143	168	193	118	143	168	90	118	143	90	118	90
F	10	10	10	10	10	10	10	10	10	10	10	8	8	8	8	8	6
G	584	470	356	229	571	457	343	229	444	330	216	432	317	203	305	190	178
M	508	381	254	127	508	381	254	127	381	254	127	381	254	127	254	127	127

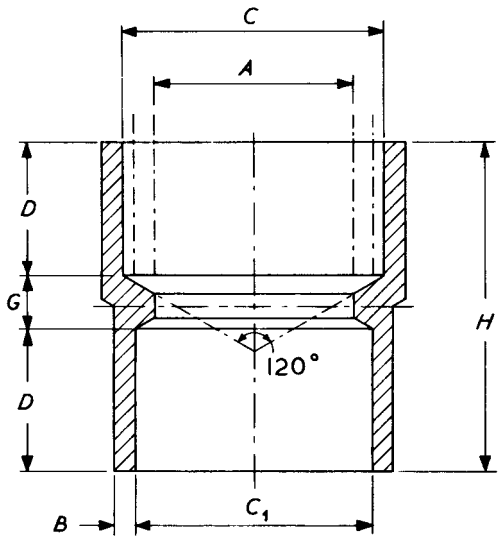

Figure 6 — Socket for connecting asbestos-cement pipes to metal pipes of similar internal diameter

Table 6 — Sockets for connecting asbestos-cement pipes to metal pipes of similar internal diameter

All sizes in millimetres

Dia. *A*	**75**	**100**	**125**	**150**	**175**	**200**	**225**	**250**	**300**
B	7.5	9	9	9	9	9	9	9	12
C	102	130	159	184	213	238	263	288	344
C_1	92	117	143	171	198	227	257	286	338
D	51	64	76	89	102	102	102	102	102
G	24	29	29	29	29	29	29	29	38
H	126	157	181	207	233	233	233	233	242

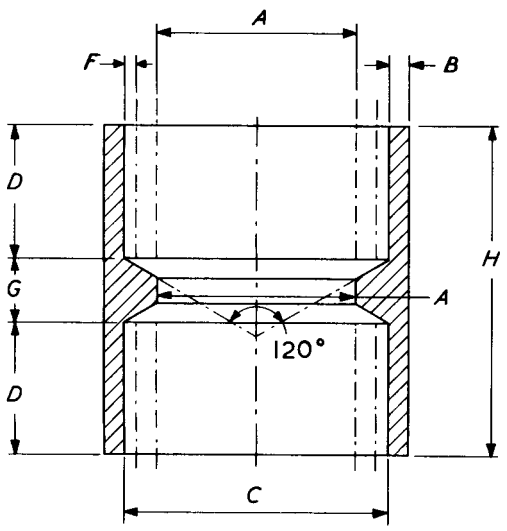

Figure 7 — Loose socket for connecting asbestos-cement pipes of similar internal diameter

Table 7 — Loose sockets for connecting asbestos-cement pipes of similar internal diameter

All sizes in millimetres

Dia. *A*	**75**	**100**	**125**	**150**	**175**	**200**	**225**	**250**	**300**	**375**	**450**	**600**
B	7.5	9	9	9	9	9	9	9	12	12	12	12
C	102	130	159	184	213	238	263	288	344	419	494	644
D	51	64	76	89	102	102	102	102	102	102	102	102
F	6	6	8	8	10	10	10	10	10	10	10	10
G	24	29	29	29	29	29	29	29	38	38	38	38
H	126	157	181	207	231	231	231	231	231	242	242	242

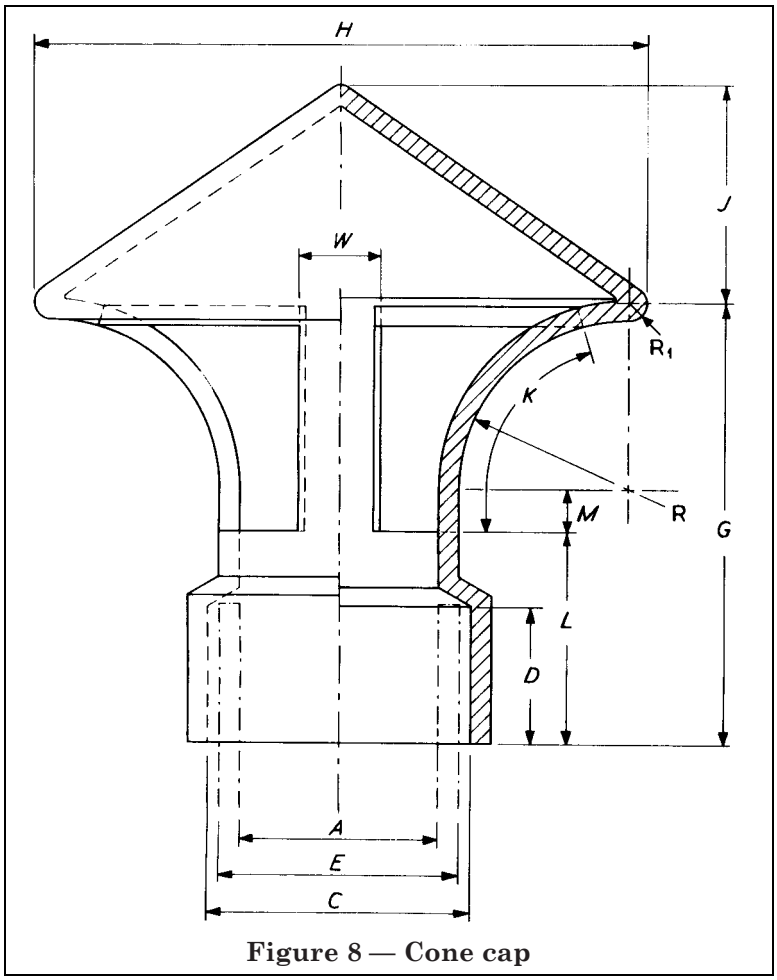

Figure 8 — Cone cap

Table 8 — Cone caps

All sizes in millimetres

Dia. *A*	**75**	**100**	**125**	**150**	**175**	**200**	**225**	**250**	**300**	**375**	**450**	**600**
B	7.5	9	9	9	9	9	9	9	12	12	12	12
C	102	130	159	184	213	238	263	288	344	419	494	644
D	51	64	76	89	102	102	102	102	102	102	102	102
E	90	118	143	168	193	218	243	268	324	399	474	624
F	6	6	8	8	10	10	10	10	10	10	10	10
G	168	203	241	279	317	336	368	394	457	489	517	575
H	235	289	340	387	406	476	533	584	660	775	889	1 118
J	83	100	119	136	114	130	146	159	175	203	232	289
K	97	117	146	170	190	217	257	283	335	387	425	502
L	81	94	106	121	140	140	141	143	146	146	146	146
M	16	25	38	51	70	76	84	95	148	159	168	187
R	65	75	87	98	98	121	136	146	152	171	190	229
R_1	6	10	10	10	6	6	6	10	13	13	13	13
W	32	32	38	51	76	76	89	102	121	149	178	235
No. of openings	3	3	3	3	4	4	4	4	4	4	4	4
Free area factor	6.25	5.75	5.5	5	3.75	4	4	4	4	3.625	2.625	2.375
Area of openings = cross-sectional area of diameter *A* × free area factor.												
NOTE These cone caps are not suitable for use on flues for gas appliances												

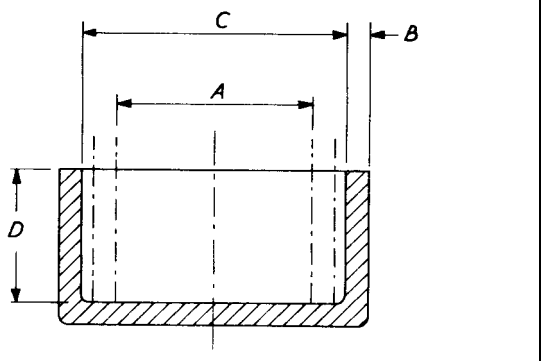

Figure 9 — Blank cap

Table 9 — Blank caps

All sizes in millimetres

Dia. *A*	75	100	125	150	175	200	225	250	300	375	450	600
B	7.5	9	9	9	9	9	9	9	12	12	12	12
C	102	130	159	184	213	238	263	288	344	419	494	644
D	51	64	76	89	102	102	102	102	102	102	102	102

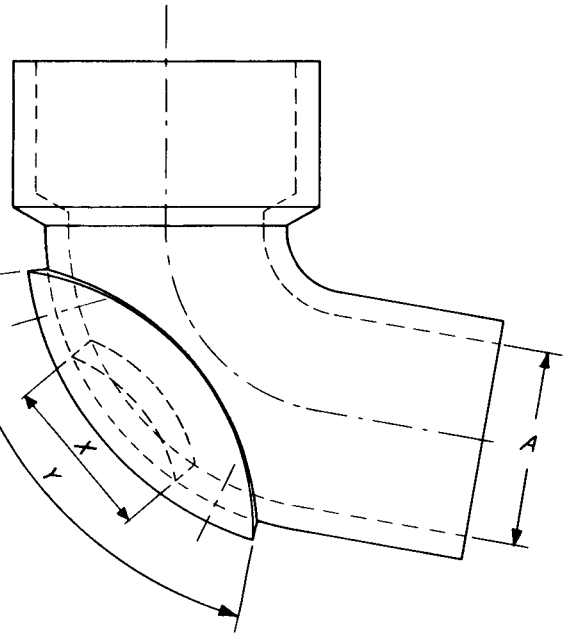

Figure 10 — Cleaning door

Table 10 — Cleaning doors

All sizes in millimetres

Dia. *A*	75	100	125	150	175	200	225	250	300	375	450	600
X	63	89	114	140	152	165	178	190	216	254	292	368
Y	133	190	222	248	267	279	292	305	330	368	406	483

Table 11 — Tolerances

All sizes in millimetres

Nominal size	Nominal length	Thickness of pipes and fittings	Permissible variation			
			Internal diameter of pipe or fitting	Thickness of pipe or fitting	External diameter of pipe or fitting	Length of pipe
75	900, 1 200 and 1 800 in all sizes	7.5	± 3.0 in all sizes	± 1.5 in all sizes	± 3.0	+ 0 – 12 in all sizes
100		9.0			± 5.0	
125		9.0			± 5.0	
150		9.0			± 5.0	
175		9.0			± 5.0	
200		9.0			± 5.0	
225		9.0			± 5.0	
250		9.0			± 5.0	
300		12.0			± 6.0	
375	900 and 1 200 in all sizes	12.0			± 6.0	
450		12.0			± 6.0	
600		12.0			± 6.0	

Table 12 — Minimum hydraulic bursting pressure

Nominal size of pipe	Minimum bursting pressure
mm	mbar[a]
75	5 850
100	5 150
125	4 100
150	3 450
175	3 100
200	2 750
225	2 400
250	2 050
300	2 400
375	1 850
450	1 500
600	1 150

[a] 1 mbar = 0.1 kPa

Table 13 — Sampling

1	2	3	4	5	6
Size of inspection lot	Sample size	Initial sample		Initial + second samples	
		Acceptance number Ac_1	Rejection number Re_1	Acceptance number Ac_2	Rejection number Re_2
400	5	0	2	1	2
401 – 800	7	0	2	1	2
801 – 1 500	10	0	2	2	3
1 501 – 3 000	15	0	3	3	4

NOTE Minimum inspection lot size = 400. Maximum inspection lot size = 3 000.

Publications referred to

This standard makes reference to the following British Standards:
BS 12, *Portland cement (ordinary and rapid-hardening).*
BS 567, *Asbestos-cement flue pipes and fittings, light quality*.
BS 1014, *Pigments for cement, magnesium oxychloride and concrete*.
BS 4624, *Methods of test for asbestos and asbestos-cement building products.*
CP 337, *Flues for gas appliances up to 150 000 Btu/h rating*.
BS 6100, *Glossary of building and civil engineering terms.*
BS 6100-1.5.1, *Co-ordination of dimensions; tolerances and accuracy*.

BSI Certification Trade Mark

The Kitemark

The British Standards Institution is the owner of a registered certification trade mark. It is usually associated with the words "approved to British Standard" as shown below, the number of the relevant British Standard being added. This mark may be used only by those licensed under the certification mark scheme operated by BSI. The presence of this mark on or in relation to a product is an assurance that the goods have been produced under a system of supervision, control and testing, operated during manufacture and including periodical inspection of the manufacturer's works in accordance with the certification mark scheme of BSI designed to ensure compliance with a British Standard.

Further particulars of the terms of licence may be obtained from the Quality Assurance Department, British Standards Institution, Maylands Avenue, Hemel Hempstead, Herts.

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001.

BSI
389 Chiswick High Road
London
W4 4AL