BRITISH STANDARD

BS 4607-2: 1970

CONFIRMED DECEMBER 1985

Specification for

Non-metallic conduits and fittings for electrical installations —

Part 2: Rigid PVC conduits and conduit fittings. Imperial Units

UDC 621.315.67:678.743.22

Co-operating organizations

The Electrical Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Associated Offices' Technical Committee
Association of Consulting Engineers*
Association of Mining, Electrical and Mechanical Engineers
Association of Supervisory and Executive Engineers*
British Electrical and Allied Manufacturers' Association
British Radio Equipment Manufacturers' Association
British Railways Board
Crown Agents for Oversea Governments and Administrations
Department of Employment and Productivity
Electric Cable Makers' Confederation
Electrical Contractors' Association (Incorporated)
Electrical Contractors' Association of Scotland
Electrical Research Association
Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales*
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Oil Companies Materials Association
Post Office*
Public Transport Association (Incorporated)
South of Scotland Electricity Board

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

Aluminium Federation
Association of Industrialized Building Components Manufacturers Ltd.
British Electric Conduit Systems Manufacturers
British Plastics Federation
Confederation of British Industry
Light Metal Founders' Association
Zinc Development Association

This British Standard, having been approved by the Electrical Industry Standards Committee, was published under the authority of the Executive Board on
30th July 1970

The following BSI references relate to the work on this standard:
Committee reference ELE/80/2
Draft for comment
AB(ELE) 6717 and
AB(ELE) 9345

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Contents

Foreword

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook. The BS Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standard:

BS 31, *Steel conduit and fittings for electrical wiring*.

This British Standard has been prepared under the authority of the Electrical Industry Standards Committee, as a result of proposals by the Codes of Practice Committee for Electrical Engineering, in view of the increasing use of plastics conduits for electrical installations both in the United Kingdom and other countries.

This part of the standard provides for manufacture in accordance with two distinct PVC materials, as follows:

1) high impact, modified, PVC,

2) normal impact, unmodified, PVC.

The important advantage of type 1) is that it can be readily handled without undue risk of failure by impact during installation. On the other hand, type 2) offers better ageing and weathering resistance in exposed positions both during storage and after installation.

Part 1 of this standard[1)] gives details of the requirements for PVC conduit manufactured from normal impact, unmodified, PVC in metric units and has been prepared to align with the requirements of CEE Publication 26, "Specification for rigid conduits of polyvinylchloride for electrical installations and fittings for such conduits".

It is envisaged that Part 1 of this standard will be extended as necessary with the subsequent withdrawal of Part 2 as soon as it has been possible to achieve complete agreement and integration with the CEE.

Also included in this Part of the standard are the dimensional details of non-circular conduit. Such conduits are not subject to the tests specified and are included for dimensional standardization only to ensure interchangeability.

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 57 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)] BS 4607, "Non-metallic conduits and fittings for electrical installations", Part 1, "Rigid PVC conduits and conduit fittings. Metric units".

1 Scope

This Part of this British Standard specifies the requirements for conduits and conduit fittings of tubular form, using imperial units, manufactured from either high impact, modified PVC or normal impact, unmodified PVC and intended for the protection of cables in electrical installations.

Details are also given of the dimensional requirements only for non-circular conduits.

2 General requirements

2.1 Conduits and conduit fittings shall be so designed and constructed that they ensure reliable mechanical protection to the cables contained therein, and shall withstand the stresses likely to occur during transport, storage and installation.

2.1.1 TEST. In general compliance shall be checked by carrying out all the tests specified.

3 General conditions for tests

3.1 Tests according to this standard are type tests.

3.2 Unless otherwise specified the tests shall be carried out at an ambient temperature of 20 ± 5 °C.

3.3 Unless otherwise specified, each test shall be made on three fresh samples. For conduits, six manufacturing lengths are required, the samples for the various tests being taken from different lengths.

3.4 Unless otherwise specified, conduits and conduit fittings shall be deemed not to comply with this standard if there are more failures than that of one sample in any one of the tests. If one sample fails in a test, that test and those preceding which may have influenced the result of that test shall be repeated on another set of samples of the number specified, all of which shall then comply with the repeated tests.

NOTE The applicant, when submitting the first set of samples, may also submit the additional set of samples of fittings or lengths of conduit which may be wanted should one sample fail. The testing station will then, without further request, test the additional samples and will only reject if a further failure occurs. If the additional set of samples of fittings or lengths of conduit is not submitted at the same time, a failure of one sample will entail a rejection.

4 Classification

4.1 Conduits are classified according to the type of material used in their manufacture, i.e.

1) High impact, modified, PVC.

2) Normal impact, unmodified, PVC.

These conduits are suitable for installation, storage or transport at temperatures not normally below – 5 °C.

NOTE Fittings are not classified.

5 Marking

5.1 Each length of conduit shall be marked with the maker's name or trade mark, immediately followed by a code to designate the type of material used in its manufacture and the temperature below which it is not normally used. The two-code designations specified in this part of the standard are:

Type AH — high impact material for use at temperatures not normally below – 5 °C.

Type AN — normal impact material for use at temperatures not normally below – 5 °C.

NOTE Marking of conduits should preferably be at a distance not exceeding 50 mm from one of the ends.

Conduits shall be marked with the nominal size.

5.2 Conduit fittings, where possible, shall be marked with the maker's name or trade mark. In addition, a type reference shall be marked on the packing, as shown on the Standard Sheet.

5.3 Marking shall be indelible and easily legible.

5.4 TEST. Compliance with the requirements of **5.1** to **5.3** shall be checked by inspection and by rubbing the marking by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked in petroleum spirit.

NOTE Marking may be applied by stamping, printing, paper stickers or water slide transfers.

A revision of this test is under consideration.

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

6 Dimensions

6.1 Conduits and fittings shall comply with the appropriate Standard Sheets as specified below:

conduit, light and heavy gauge:	Sheet 51
non-circular conduits:	Sheet 52
slip-type plain couplings:	Sheet 53
couplers, internally screwed:	Sheet 54
slip-type coupling bends:	Sheet 55
heavy gauge bend, plain or internally screwed:	Sheet 56
inspection bends, plain or internally screwed:	Sheet 57
inspection tees, plain or internally screwed:	Sheet 58
inspection elbows, plain or internally screwed:	Sheet 59
inspection sleeve coupler, plain or internally screwed:	Sheet 60
expansion type coupling, plain or internally screwed:	Sheet 61

boxes, circular, small:	Sheet 62
boxes, circular, looping:	Sheet 63
covers for circular boxes:	Sheet 64
covers, circular, ball and socket:	Sheet 65
covers, circular domed, internally screwed:	Sheet 66
plain entry reducers:	Sheet 67
screw entry reducers:	Sheet 68
bushes, hexagonal, externally screwed:	Sheet 69
locknuts and lockrings:	Sheet 70
extension rings:	Sheet 71
screw threads:	Sheet 72

NOTE Standard sheets are numbered from Sheet 51 to ensure that the markings on conduit and fittings cannot be confused with items manufactured to Part 1 of this standard, in which standard sheets are numbered from Sheet 1.

6.1.1 TEST. Compliance shall be checked by a measurement and by means of gauges according to the following figures:

Figure 1 for the maximum outside diameter of conduits,

Figure 2 for the minimum inside diameter of conduits and bends,

Figure 3 for the minimum outside diameter of conduits.

If necessary, fittings shall be cut in order to measure the wall thickness.

In case of doubt with regard to the uniformity of the wall thickness of conduits, three samples, taken from different lengths, shall be cut with a saw, a sharp knife or the like, along a plane perpendicular to the axis. The wall thickness at each cut edge shall be measured at four places as far as possible equally spaced around the circumference, one of the measurements being made at the thinnest place of the wall.

In no case shall the difference between the value measured and the average of the twelve values obtained from the three samples exceed 0.0039 in + 10 % of the average value.

6.2 Deviations from dimensions specified in the Standard Sheets may be made, but only if they provide a technical advantage and do not adversely affect the purpose and safety of conduits and conduit fittings complying with the Standard Sheets. Conduits and conduit fittings with such deviations shall, however, comply with all other requirements of this standard as far as they reasonably apply.

7 Construction

7.1 The inside and outside surfaces of conduits shall be smooth and free from burrs, flash and similar defects.

7.1.1 TEST. Compliance shall be checked by inspection.

7.2 Conduits and conduit fittings shall be of rigid PVC.

7.2.1 TEST. Compliance shall be checked by inspection and by appropriate tests.

7.3 The interior and ends of conduit fittings shall be smooth and free from burrs.

7.3.1 TEST. Compliance shall be checked by inspection.

7.4 Conduit entries of fittings shall be so designed that a reliable joint can be made between the conduit and the fitting.

7.5 It shall not be possible for the cover fixing screws on inspection fittings to come into contact with the conduit or cable.

7.6 Conformity to the Standard Sheets ensures compliance with the requirements of **7.4** and **7.5**.

8 Mechanical properties of circular conduit

8.1 Conduit shall have adequate mechanical strength.

Conduits, when bent or compressed or exposed to impacts or extreme temperatures, either during or after installation, shall show no cracks and shall not be deformed to such an extent that introduction of the cables becomes difficult, or that the cables are likely to be damaged while being drawn in.

8.1.1 TEST. Compliance shall be checked by the tests described in **8.2** to **8.5**.

8.2 Three samples of conduit, each 8 in (200 mm) long, shall be subjected to a compression test in the manner shown in Figure 4.

Before the test the outside diameter of the samples shall be measured and they shall then be conditioned at a temperature of 20 ± 1 °C for at least 10 h.

Immediately after conclusion of the conditioning period the samples shall be positioned on a flat steel support and a metal intermediate piece as shown in Figure 4 shall be placed on the middle of the sample. A slowly increasing force shall then be applied to the intermediate piece in such a way that the total force is exerted after 30 s.

After the full force has been applied for 1 min, the outside diameter of the sample shall be measured where flattening has taken place, without removing the force. The difference between the initial diameter and the diameter of the flattened sample shall not exceed 25 % of the outside diameter measured before the test.

The force and the intermediate piece shall then be removed and, 1 min after removal, the outside diameter of the sample where it has been flattened shall again be measured. The difference between the initial diameter and the diameter of the flattened sample shall then not exceed 10 % of the outside diameter measured before the test.

If the test is not made at the conditioning temperature, the measurements shall be completed within 5 min after removal of the samples from the conditioning atmosphere.

After the test, the samples shall show no cracks visible to the naked eye.

For conduits of Type AH the total force of 167 lbf (750 N) shall be exerted by an intermediate steel block, 75 mm × 75 mm × 75 mm.

For material of Type AN the total force of 167 lbf (750 N) shall be exerted by an intermediate steel block, 50 mm × 50 mm × 50 mm.

8.3 Twelve samples of conduit, each 8 in (200 mm) long, shall be subjected to an impact test by means of the apparatus shown in Figure 5.

Before the test the samples shall be conditioned at a temperature of 60 ± 2 °C for 24 h. The test apparatus shall then be placed on a pad of sponge rubber, 40 mm thick, and these together with the samples shall be placed in a refrigerator the air temperature within which is maintained at – 5 ± 1 °C.

When the samples have cooled to the temperature of the air within the refrigerator, or after 2 h, whichever is the longer period, each sample shall in turn be placed in position on the steel base as shown in Figure 5, and the hammer allowed to fall from a height of 200 mm.

After the test there shall be no sign of disintegration, neither shall there be any crack visible to the naked eye in at least nine of the samples.

For material of Type AH the hammer shall have a mass of 2 kg.

For material of Type AN the hammer shall have a mass of 1 kg.

8.4 Conduit of nominal sizes ⅝ and ¾ shall be subjected to a bending test by means of the device shown in Figure 6.

The test shall be made on three samples of conduit, each 20 in (500 mm) long, at room temperature, and on three similar samples, in a refrigerator, at a temperature of – 5 ± 2 °C.

A bending aid in the form of a coiled spring of square section metal wire, without burrs, with an overall diameter between 0.028 in and 0.039 in less than the minimum calculated inside diameter of the conduit, shall be inserted into each sample before bending.

Before the test at low temperature the samples, with the bending spring inserted, and the bending tool, shall be conditioned for at least 2 h in the refrigerator at the temperature specified.

Each sample shall be placed in position as shown in Figure 6 and lightly held in the groove of the former by means of the clamp. The bending rollers shall be moved so that the sample is bent round the former through a total angle of approximately 180° so that, when freed, the sample has a bend of 90°. In this position it shall be possible to remove the bending spring without damage to the sample or the spring.

After the test the samples shall show no cracks visible to the naked eye.

8.5 Conduit of nominal sizes ⅝ and ¾ shall be subjected to a collapse test, the test arrangement being as shown in Figure 7.

Three samples of conduit, each 20 in (500 mm) long, shall be bent as described in **8.4**, but at room temperature, and then fixed to a rigid support by means of four straps as shown in Figure 7.

After removal of the bending spring the support, with the samples in position, shall be kept for 24 h in a heating cabinet at a temperature of 60 ± 2 °C.

After this period it shall be possible to pass the appropriate gauge as shown in Figure 2 through the conduit.

9 Resistance to heat

9.1 Conduit and fittings shall be resistant to heat.

9.1.1 TEST. Compliance shall be checked by a ball-pressure test by means of the apparatus shown in Figure 8.

The samples shall be prepared by cutting in half longitudinally three pieces of conduit, about 3 in (80 mm) long. One of each pair of samples so prepared shall be placed in the horizontal position on a steel support, as shown in Figure 8, the support and the sample being placed in a heating cabinet at a temperature of 60 ± 2 °C.

As soon as the support and the sample have attained the temperature specified, a steel ball of 5 mm diameter shall be pressed against the inner surface of the sample by a force of 4.5 lbf (20 N).

After 1 h the ball shall be removed and the sample taken out of the heating cabinet. When the sample has attained room temperature the diameter of the impression shall be measured; this shall not exceed 2 mm.

10 Resistance to burning

10.1 Conduits and fittings shall be self-extinguishing.

10.1.1 TEST. Compliance shall be checked by the following test, which shall be made on three samples; for conduits, each sample has a length of 8 in (200 mm).

The test shall be made in still air with a Bunsen burner, having a nozzle with an internal diameter of 9 mm, burning town gas. While the burner is in the vertical position, the flame shall be adjusted so that its overall length is 100 mm and the length of the inner blue cone is 50 mm. The burner shall then be supported so that its axis is at an angle of 45° to the vertical.

The sample shall be held vertically in such a position that the tip of the inner cone of the flame touches the surface of the sample at a distance of approximately 100 mm from its lower end.

The sample shall be held in the flame for 1 min.

If the sample burns it shall do so slowly and the burning shall not spread appreciably; any flame shall have died out in less than 30 s after removal of the burner.

NOTE In order to verify that the flame is hot enough for the purpose of this test, a bare copper wire, 0.7 mm in diameter and at least 100 mm long, is held horizontally so that it passes through the middle of the flame, 50 mm above the top of the burner, its free end being vertically above the edge of the burner. The wire should melt within 6 s.

11 Insulation resistance and electric strength

11.1 The insulation resistance and the electric strength of conduits and fittings shall be adequate.

11.2 TEST. For conduits, compliance shall be checked by the tests of **11.3** and **11.4**, which shall be made on three samples of appropriate length. For the purpose of the test of **11.4**, the ends of each sample are provided with a conductive coating at least 10 mm long.

11.3 The samples shall be bent and immersed over a length of 1 m in a 5 % solution by weight of sodium chloride in water of a temperature of 20 ± 5 °C, a length of about 100 mm at each end being kept above the water level. The solution shall then be poured into the sample until the levels inside and outside are approximately the same and an electrode is immersed in the solution inside each sample, and also in the solution outside. The best arrangement is illustrated in Figure 9.

After 24 h a voltage of 2 000 V, of substantially sine-wave form and having a frequency of 50 Hz, shall be applied for 15 min between the electrodes.

No breakdown shall occur during the test.

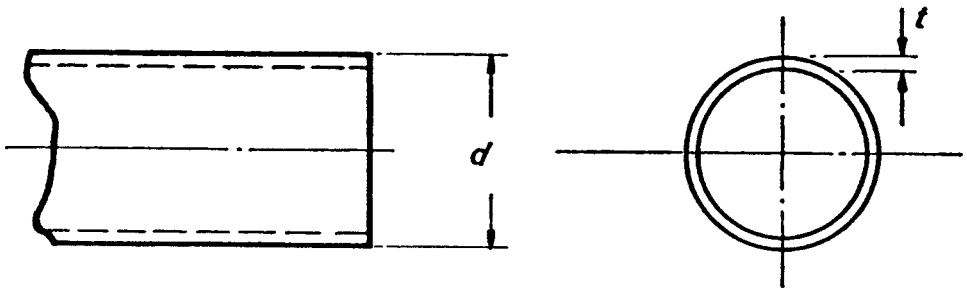
11.4 Immediately afterwards the samples shall be immersed, as described in **11.3**, in the solution maintained at a temperature of 60 ± 2 °C and the electrodes again placed in position.

After 2 h the insulation resistance of each sample shall be determined by applying a d.c. voltage of approximately 500 V between the electrodes, the conductive coatings being also connected to the voltage source but not included in the measuring circuit. The measurement shall be made 1 min after application of the voltage (see Figure 9).

The insulation resistance shall not be less than 100 MΩ.

NOTE The voltage is applied to the conductive coatings in order to exclude any leakage current across the exposed surface.

Conduit, light and heavy gauge	STANDARD SHEET 51



Type reference for conduit of nominal size ¾:
BS 4607.51.AH.¾ or BS 4607.51.AN.¾ (see **5.1**).
Material: PVC.
All dimensions in inches.

HEAVY GAUGE CONDUIT

Nominal size	*d*	Tolerance	*t*	Tolerance
⅝	0.625	+ 0 – 0.010	0.070	± 0.005
¾	0.750		0.075	
1	1.000		0.080	
1¼	1.250	+ 0 – 0.015	0.100	
Screw threads to Standard Sheet 72				

LIGHT GAUGE CONDUIT

⅝	0.625	+ 0 – 0.010	0.045	± 0.003
¾	0.750		0.045	
1	1.000		0.060	± 0.004
1¼	1.250	+ 0 – 0.015	0.060	

Preferred manufacturing length = 10 ft min. or 13 ft max.

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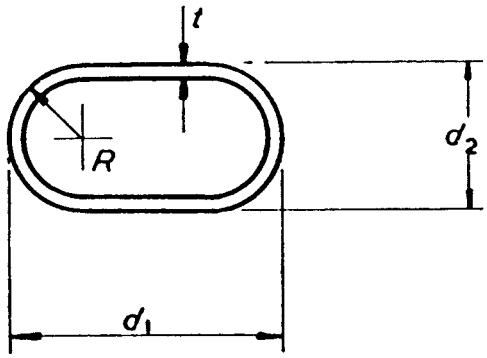
Non-circular conduits	STANDARD SHEET 52



Type reference for non-circular conduit of nominal size ¾:
BS 4607.52.AH.¾ or BS 4607.52.AN.¾ (see **5.1**).
Material: PVC.
All dimensions in inches.

Nominal size	d_1	Tolerance	d_2	Tolerance	t	Tolerance	R Nominal
½	0.510	+ 0 − 0.008	0.320	+ 0 − 0.008	0.034	± 0.004	0.160
⅝	0.640		0.390		0.034		0.195
¾	0.890		0.450		0.034		0.225
1	1.130	+ 0 − 0.010	0.450	+ 0 − 0.010	0.040	± 0.005	0.225
1¼	1.280		0.450		0.040		0.225

Preferred manufacturing length = 10 ft.
Other size non-circular conduits under consideration.

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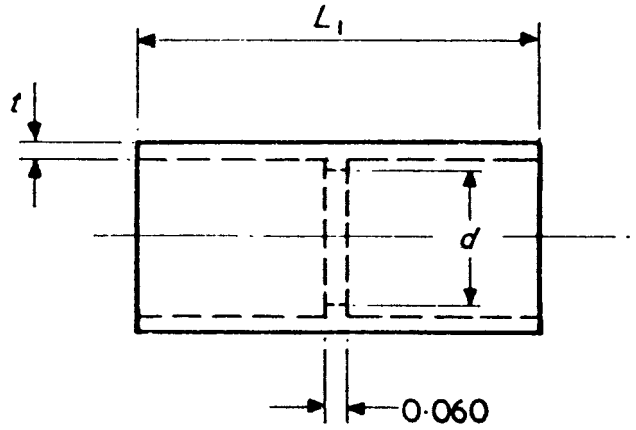
Slip-type plain couplings	STANDARD SHEET 53



Type reference for slip-type plain couplings of nominal size ¾:
BS 4607.53.¾.
Material: PVC.
All dimensions in inches.

Nominal size	*t* Minimum	L_1 Minimum
⅝	0.043	1.310
¾	0.047	1.560
1	0.055	2.060
1¼	0.060	2.560

The bore of the stop (*d*) shall not be smaller than the bore of light gauge tubing.

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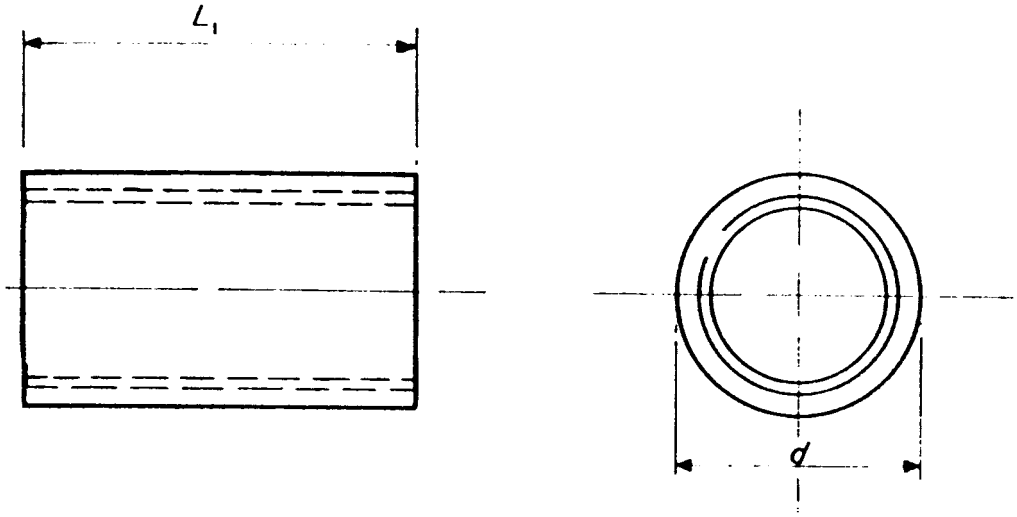
Couplers, internally screwed	STANDARD SHEET 54



Type reference for heavy gauge screwed couplings of nominal size ¾:
BS 4607.54.¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	d Minimum
⅝	1.200	0.785
¾	1.300	0.910
1	1.600	1.180
1¼	1.700	1.450

For thread details see Standard Sheet 72.

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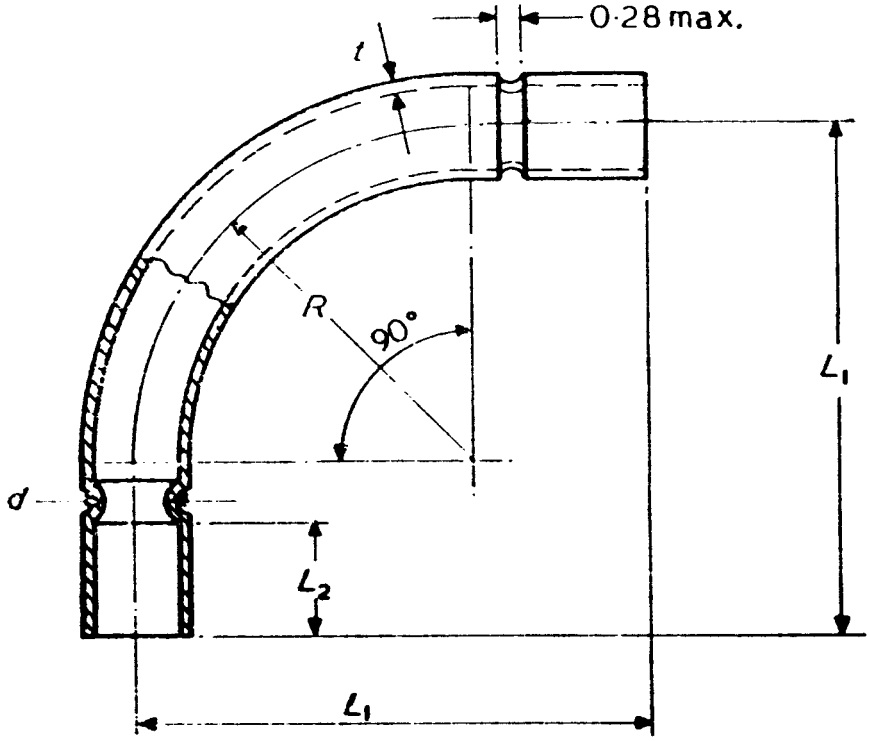
Slip-type coupling bends	STANDARD SHEET 55



Type reference for slip-type coupling bends of nominal size ¾:
BS 4607.55.¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Nominal	L_2 Nominal	t Minimum	R Nominal
⅝	4.000	0.625	0.045	2.160
¾	4.200	0.750	0.045	2.600
1	6.300	1.000	0.060	3.540
1¼	8.500	1.250	0.060	4.920

The bore of the stop (d) shall not be smaller than the bore of light gauge tube.

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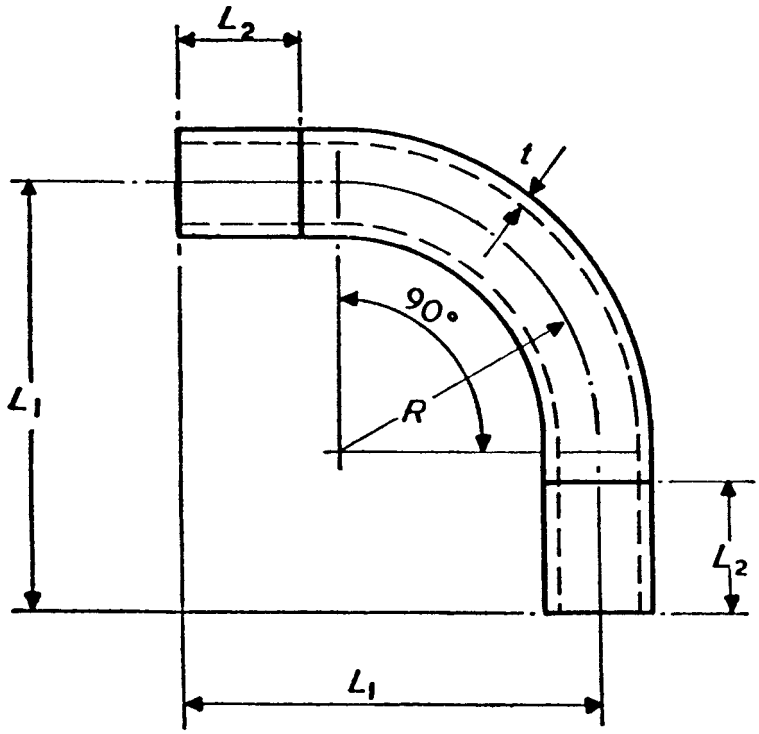
Heavy gauge bend, plain or internally screwed	STANDARD SHEET 56



Type reference for heavy gauge bends of nominal size ¾:
BS 4607.56.¾.
Material: PVC.
All dimensions in inches.
For fittings with plain or screwed couplers:
Plain coupling Standard Sheet 53.
Screwed coupling Standard sheet 54.

Nominal size	L_2 Minimum length of engagement		L_1 Nominal	R Nominal	t Minimum
	Threaded	Plain			
⅝	0.562	0.625	3.750	2.160	0.070
¾	0.625	0.750	4.500	2.600	0.075
1	0.750	1.000	6.290	3.540	0.080
1¼	0.812	1.250	8.460	4.920	0.10

For thread details see Standard Sheet 72.

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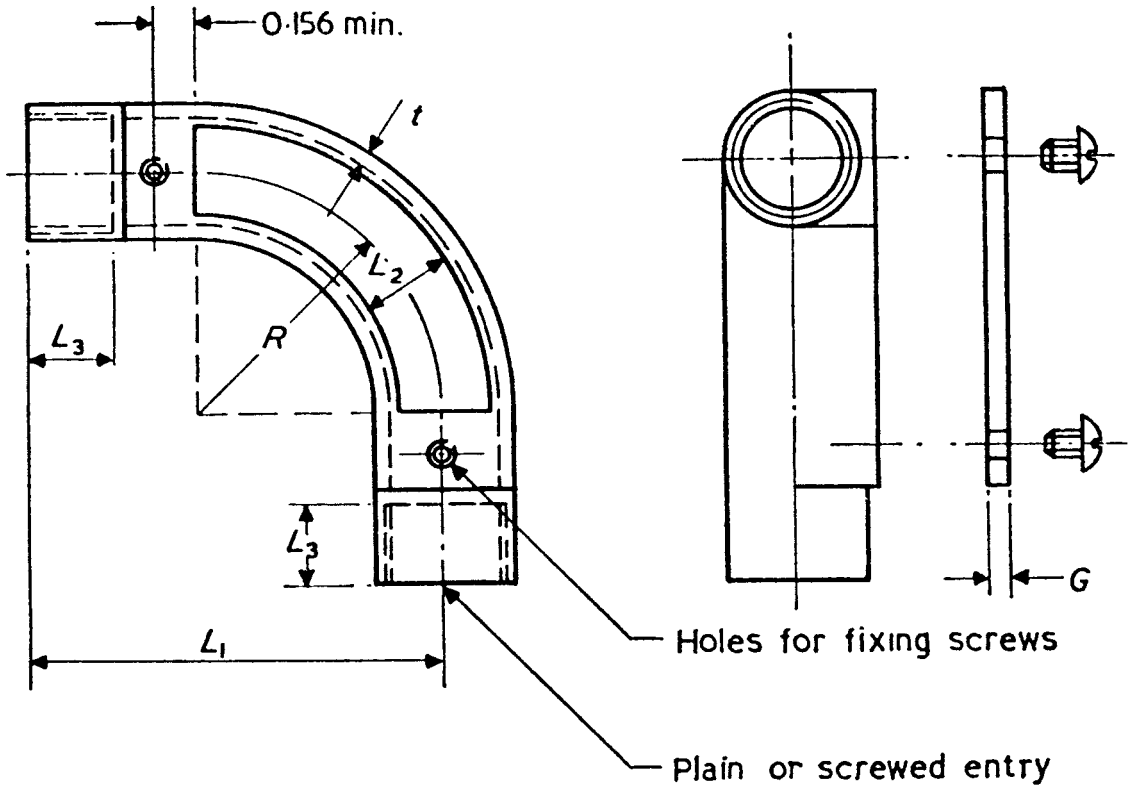
Inspection bends, plain or internally screwed	STANDARD SHEET 57



Type reference for inspection bends of nominal size ¾:
BS 4607.57.¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	R Nominal	L_2 Minimum	t Minimum	G Minimum	L_3 Minimum length of engagement	
						Threaded	Plain
⅝	2.250	1.320	0.560	0.070	0.060	0.562	0.625
¾	2.680	1.700	0.560	0.075	0.060	0.625	0.750
1	3.200	2.100	0.750	0.080	0.080	0.750	1.000

The bore of the entry shall not be smaller than the bore of light gauge conduit. For details of thread see Standard Sheet 72.

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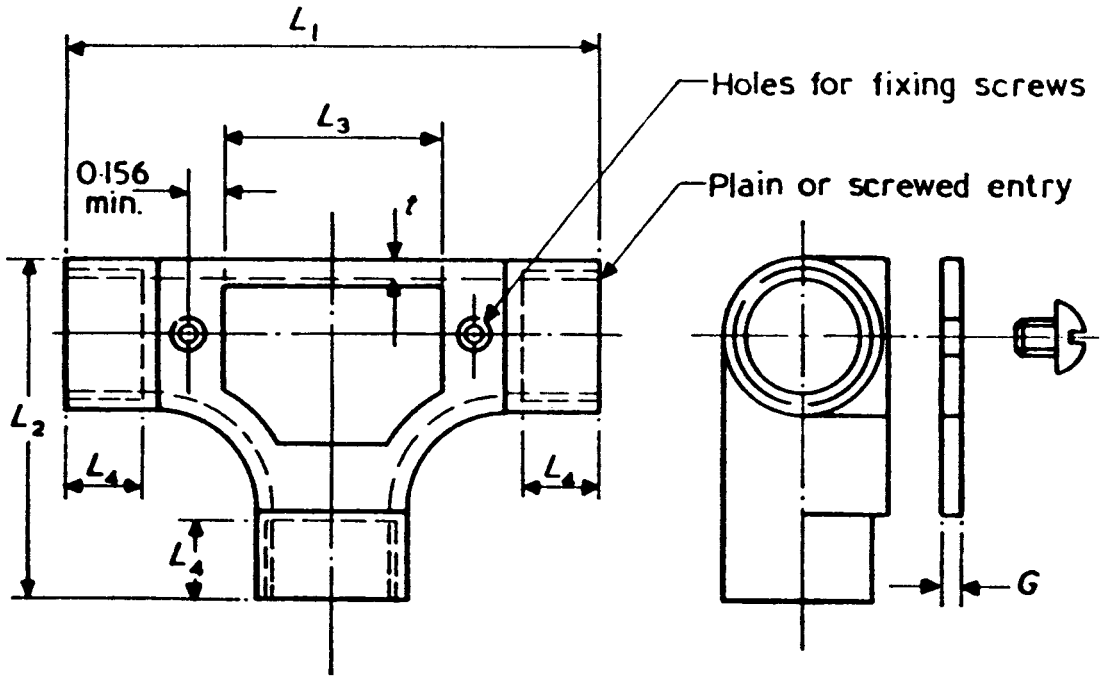
Inspection tees, plain or internally screwed	STANDARD SHEET 58



Type reference for inspection tees of nominal size ¾:
BS 4607.58.¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	L_2 Nominal	L_3 Minimum	t Minimum	G Minimum	L_4 Minimum length of engagement	
						Threaded	Plain
⅝	3.500	2.250	1.438	0.070	0.060	0.562	0.625
¾	3.500	2.250	1.438	0.075	0.060	0.625	0.750
1	4.750	3.000	1.750	0.080	0.080	0.750	1.000

The bore of the entry shall not be smaller than the bore of light gauge tubing. For details of thread see Standard Sheet 72.

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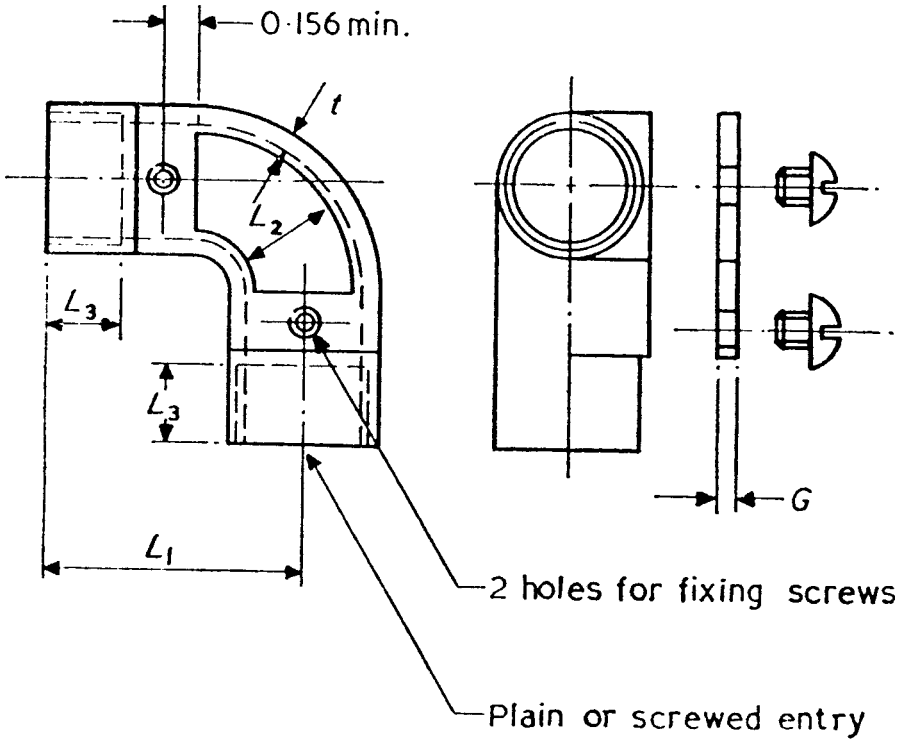
Inspection elbows, plain or internally screwed	STANDARD SHEET 59



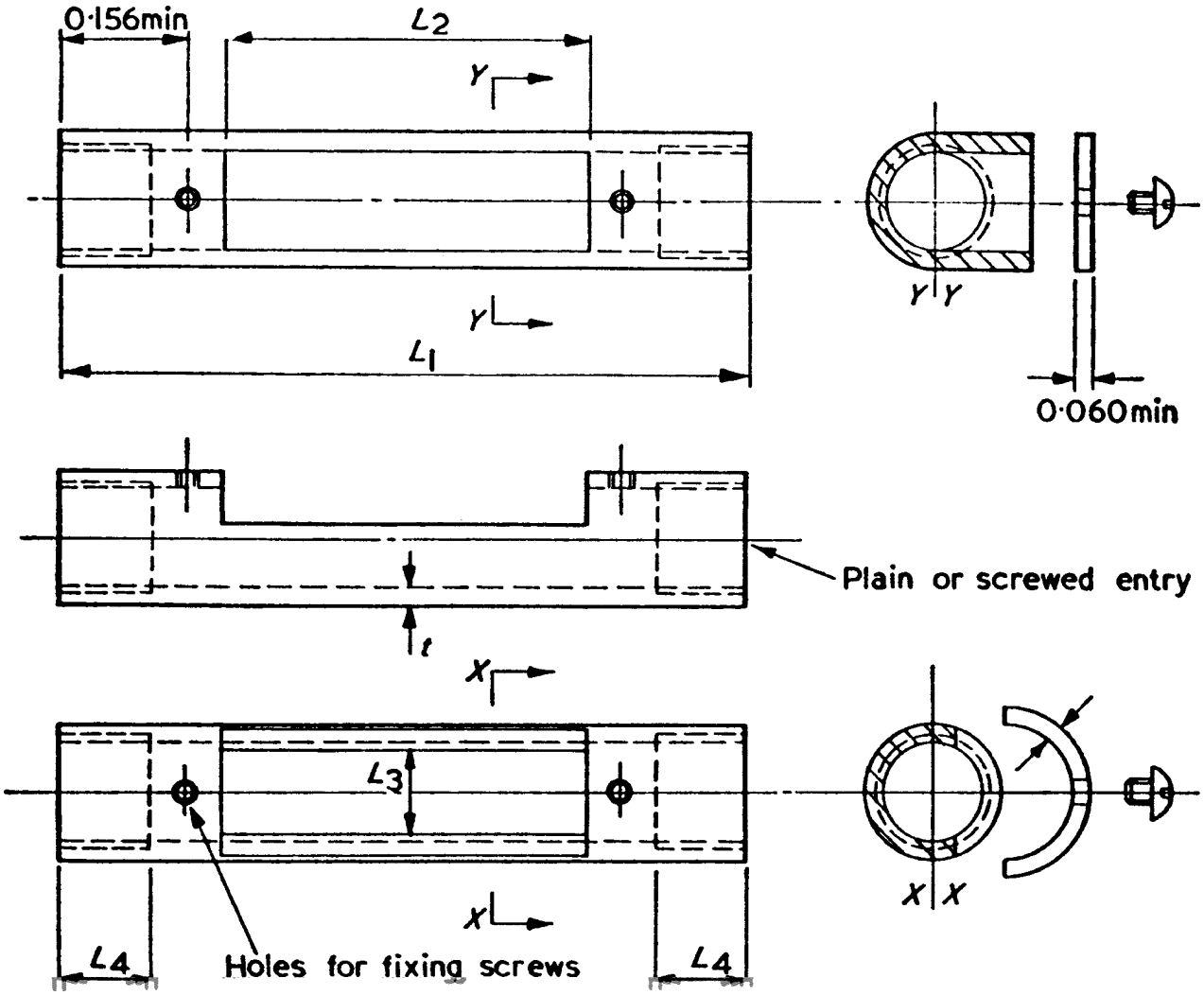
Type reference for inspection elbows of nominal size ¾:
BS 4607.59.¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	L_2 Minimum	L_3 Minimum length of engagement		t Minimum	G Minimum
			Threaded	Plain		
⅝	1.610	0.563	0.562	0.625	0.060	0.060
¾	1.610	0.563	0.625	0.750	0.070	0.060
1	1.968	0.750	0.750	1.000	0.080	0.080

The bore of entry shall not be less than the bore of light gauge conduit. For thread details see Standard Sheet 72.

blank

Inspection sleeve coupler, plain or internally screwed	STANDARD SHEET 60



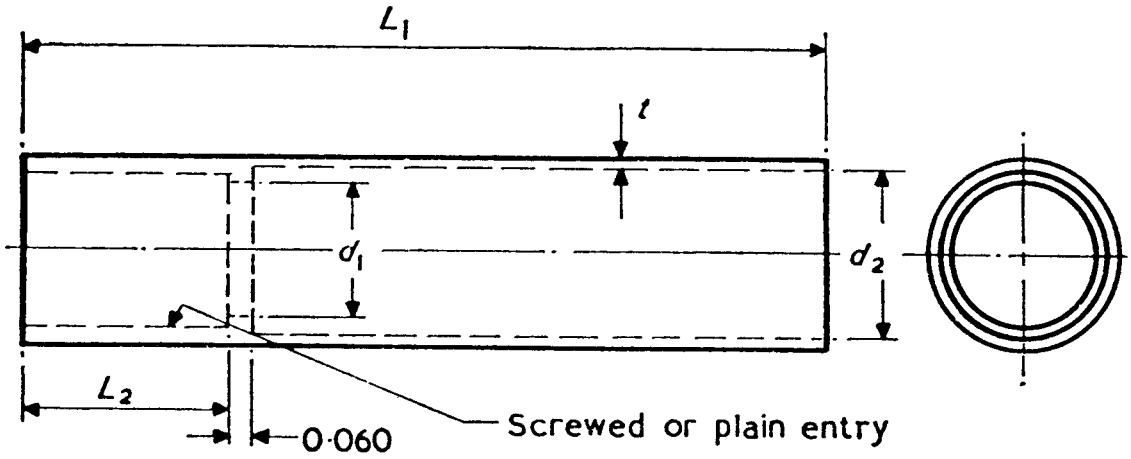
Type reference for inspection sleeve coupler of nominal size ¾:
BS 4607.60.¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	L_2 Minimum	t Minimum	L_3 Minimum	L_4 Minimum length of engagement	
					Threaded	Plain
⅝	5.000	3.000	0.070	0.500	0.562	0.625
¾	5.500	3.260	0.075	0.560	0.625	0.750
1	6.500	3.750	0.080	0.750	0.750	1.000
1¼	9.000	5.750	0.100	1.000	0.812	1.250

The bore of the entry shall not be smaller than the bore of light gauge conduit. For details of thread see Standard Sheet 72.

blank

Expansion type coupling, plain or internally screwed	STANDARD SHEET 61



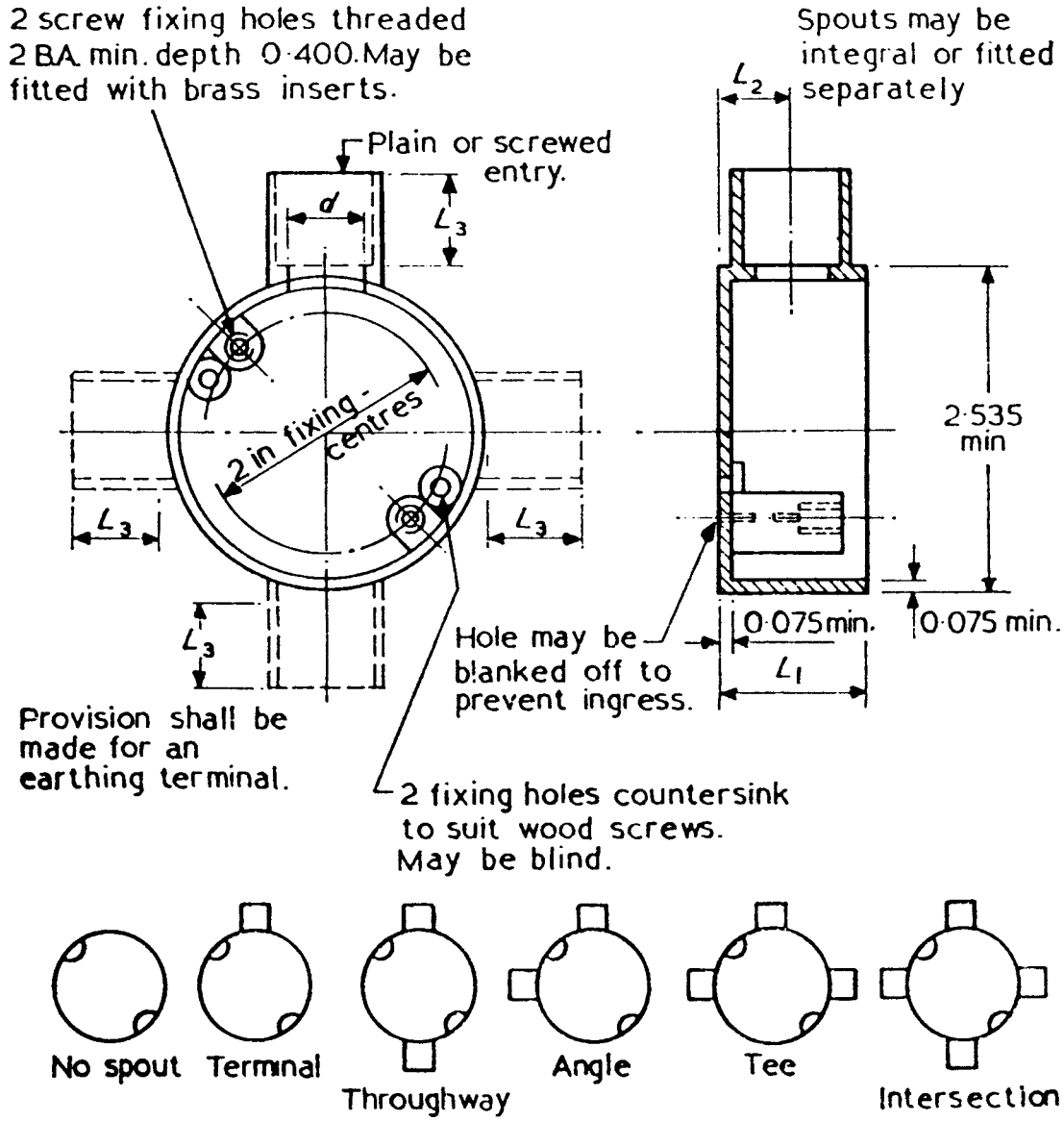
Type reference for expansion type couplings of nominal size ¾:
BS 4607.61.¾:
Material: PVC.
All dimensions in inches.

Nominal size	d_2	L_1 Minimum	t Minimum	L_2 Minimum length of engagement	
				Threaded	Plain
⅝	0.635	3.500	0.045	0.562	0.625
¾	0.760	4.000	0.045	0.625	0.750
1	1.010	4.500	0.060	0.750	1.000
1¼	1.260	5.000	0.060	0.812	1.25

The bore of the stop (d_1) shall not be smaller than the bore of light gauge conduit.
For details of thread see Standard Sheet 72.

blank

Boxes, circular, small	STANDARD SHEET 62



Type reference of small circular boxes of nominal size ¾:

BS 4607.62.¾:

Material: PVC.

All dimensions in inches.

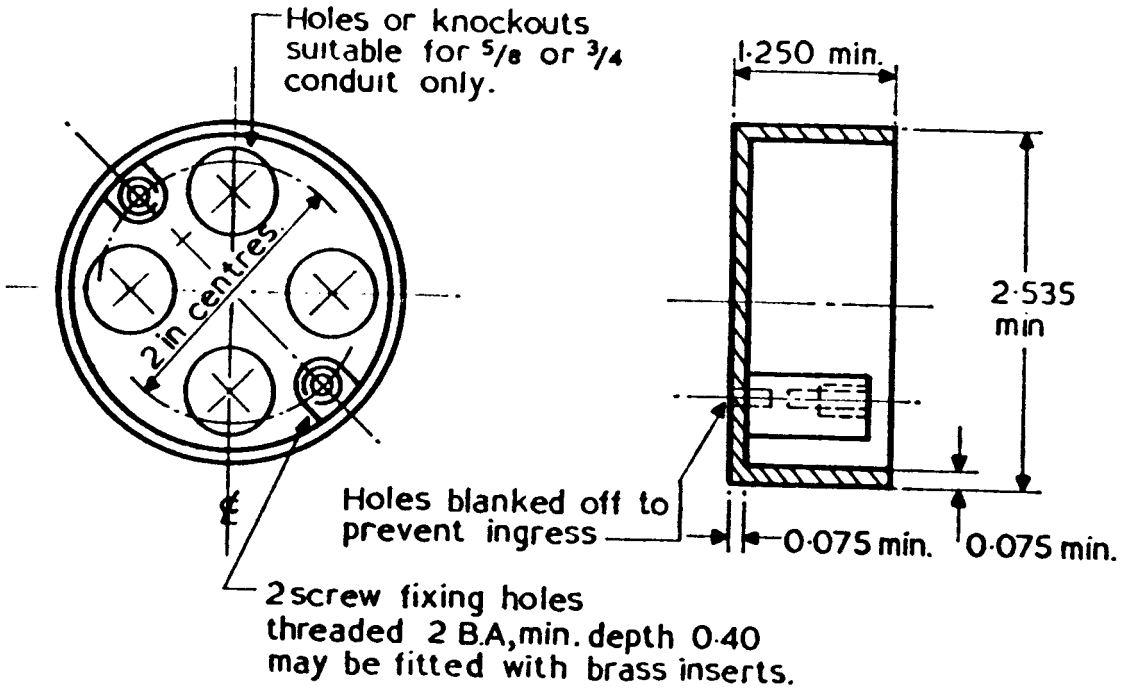
Nominal size	L_1 Minimum	L_2 Minimum	L_3 Minimum length of engagement	
			Threaded	Plain
⅝	1.125	0.570	0.562	0.625
¾	1.125	0.570	0.625	0.750
1	1.250	0.625	0.750	1.000

The bore of the entry (*d*) shall not be smaller than the bore of light gauge conduit.

For details of thread see Standard Sheet 72.

blank

Boxes, circular, looping	STANDARD SHEET 63



Type reference for looping boxes of nominal size ¾:

BS 4607.63.¾.

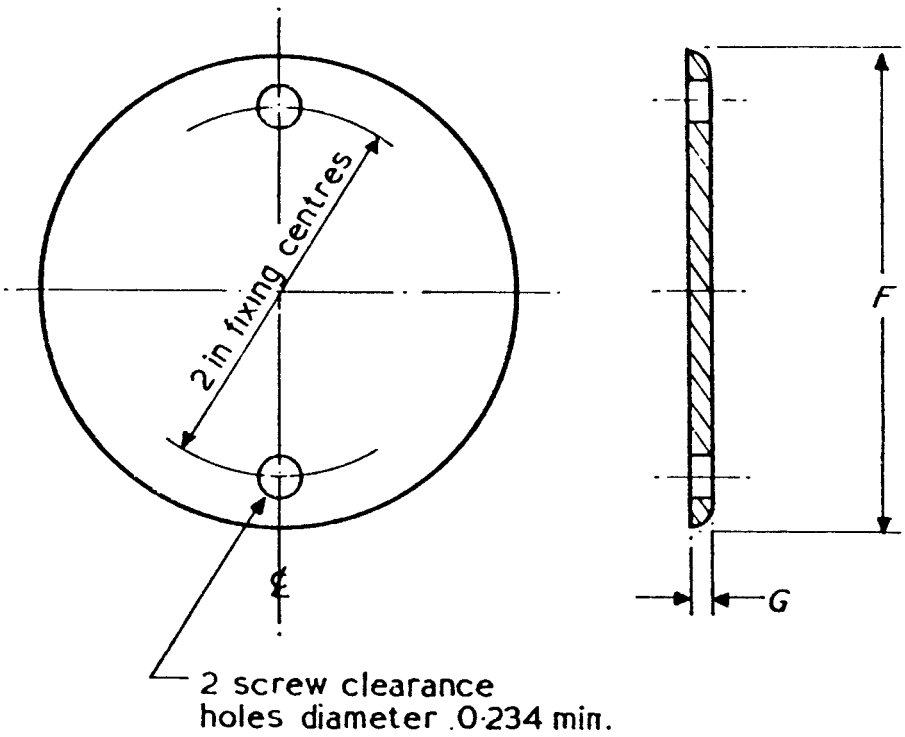
Material: PVC.

All dimensions in inches.

Box entries may be holes or knockouts.

blank

Covers for circular boxes	STANDARD SHEET 64

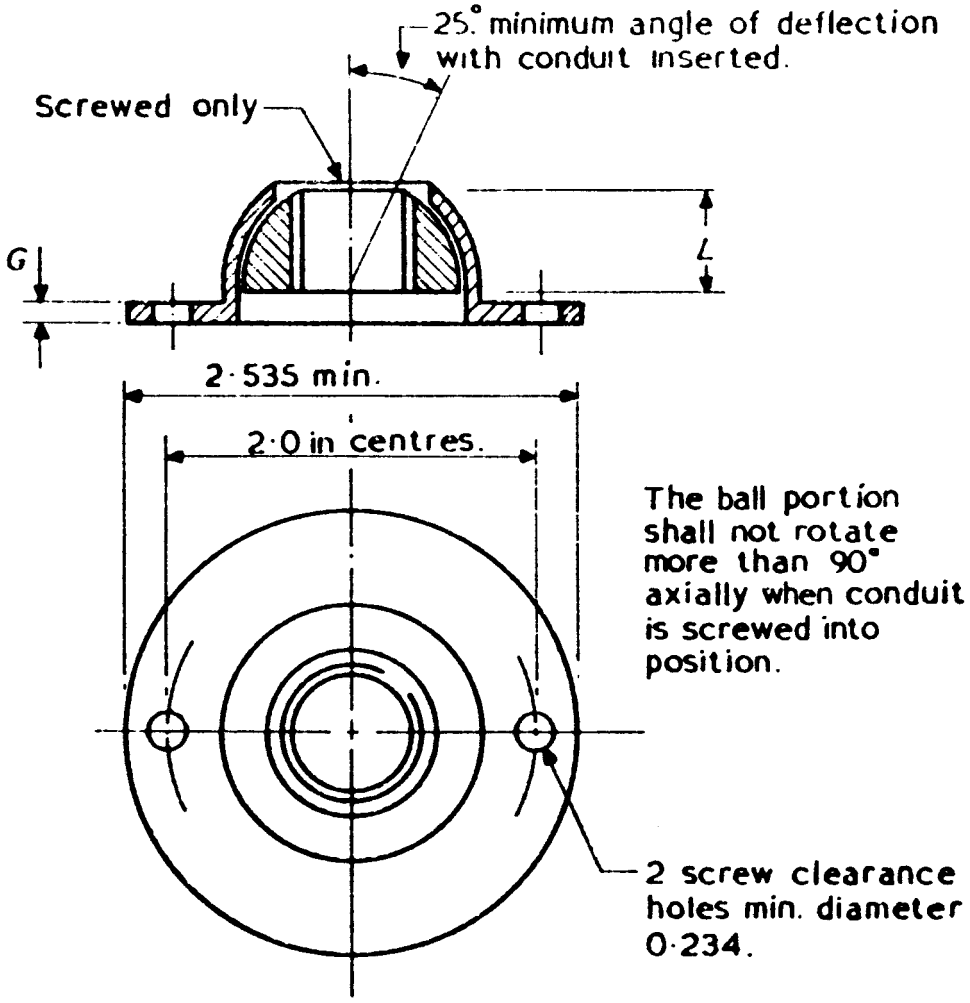


Type reference for covers for circular boxes:
BS 4607.64.
Material: PVC.
All dimensions in inches.

Type of cover	*G* Minimum	*F* Minimum
Standard	0.060	2.535
Overlapping	0.060	3.375

blank

Covers, circular, ball and socket	STANDARD SHEET 65



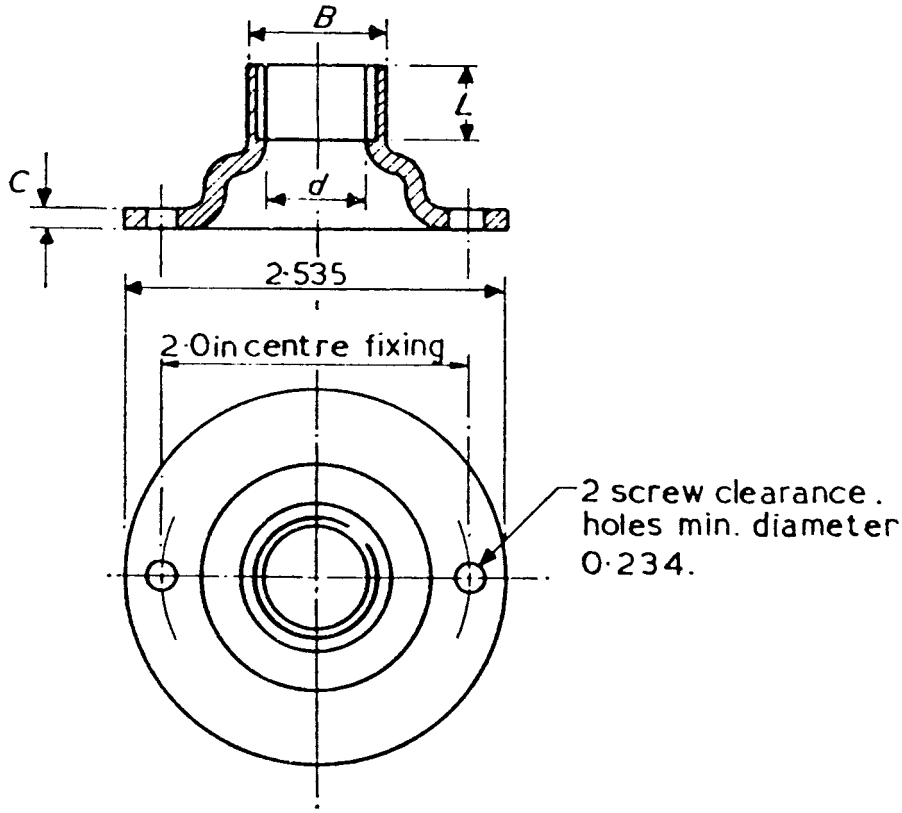
Type reference for small ball and socket covers of nominal size ¾:
BS 4607.65.¾.
Material: PVC.
All dimensions in inches.

Nominal size	*G* Minimum	*L* Minimum
⅝	0.080	0.625
¾	0.080	0.625
1	0.100	0.750

For thread details see Standard Sheet 72.

blank

Covers, circular domed internally screwed	STANDARD SHEET 66



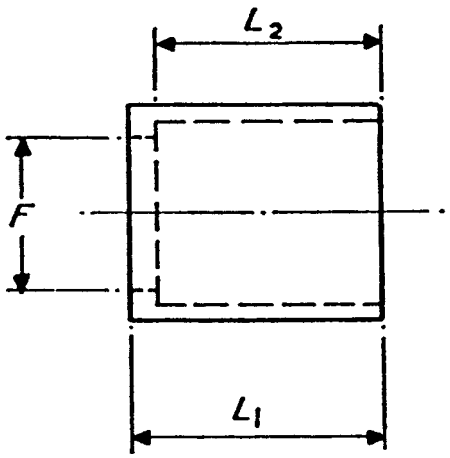
Type reference for small screwed dome covers of nominal size ¾:
BS 4607.66.¾.
Material: PVC.
All dimensions in inches.

Nominal size	*B* Minimum	*C* Minimum	*L* Minimum length of thread
⅝	0.875	0.080	0.562
¾	1.000	0.080	0.625
1	1.250	0.100	0.750

The bore of the entry (*d*) shall not be smaller than the bore of heavy gauge conduit.
For thread details see Standard Sheet 72.

blank

Plain entry reducers	STANDARD SHEET 67



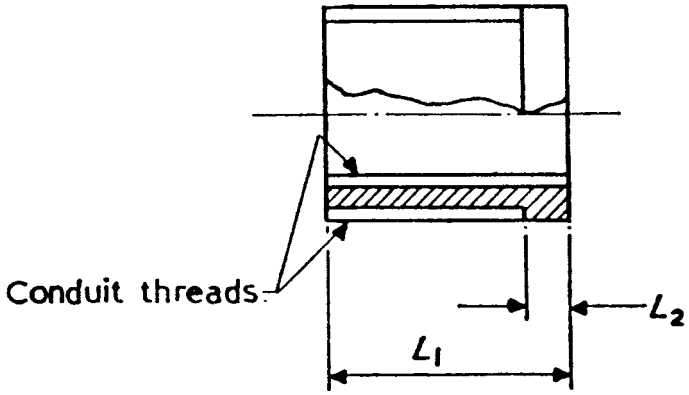
Type reference for plain entry reducers of nominal size 1–¾:
BS 4607.67.1–¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	L_2 Minimum
¾ – ⅝	0.750	0.625
1 – ¾	1.000	0.750
1¼ – 1	1.250	1.000
1¼ – ¾	1.250	0.750

Bore of entry (*F*) shall not be less than the bore of light gauge conduit.

blank

Screw entry reducers	STANDARD SHEET 68



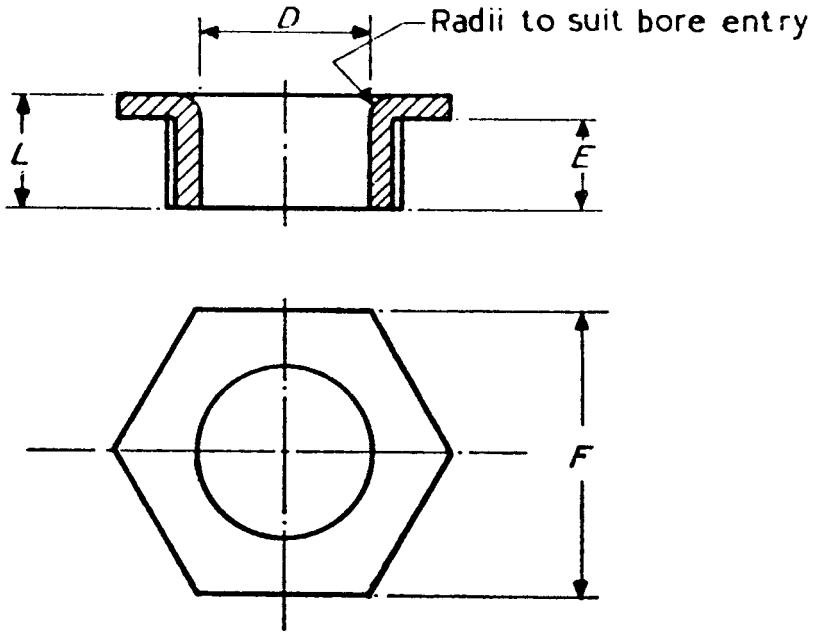
Type reference for screw entry reducers of nominal size 1–¾:
BS 4607.68.1–¾.
Material: PVC.
All dimensions in inches.

Nominal size	L_1 Minimum	L_2 Minimum
¾ – ⅝	0.875	0.250
1 – ¾	1.060	0.312
1¼ – 1	1.125	0.312
1¼ – ¾	1.125	0.312

For thread details see Standard Sheet 72.

blank

Bushes, hexagonal externally screwed	STANDARD SHEET 69



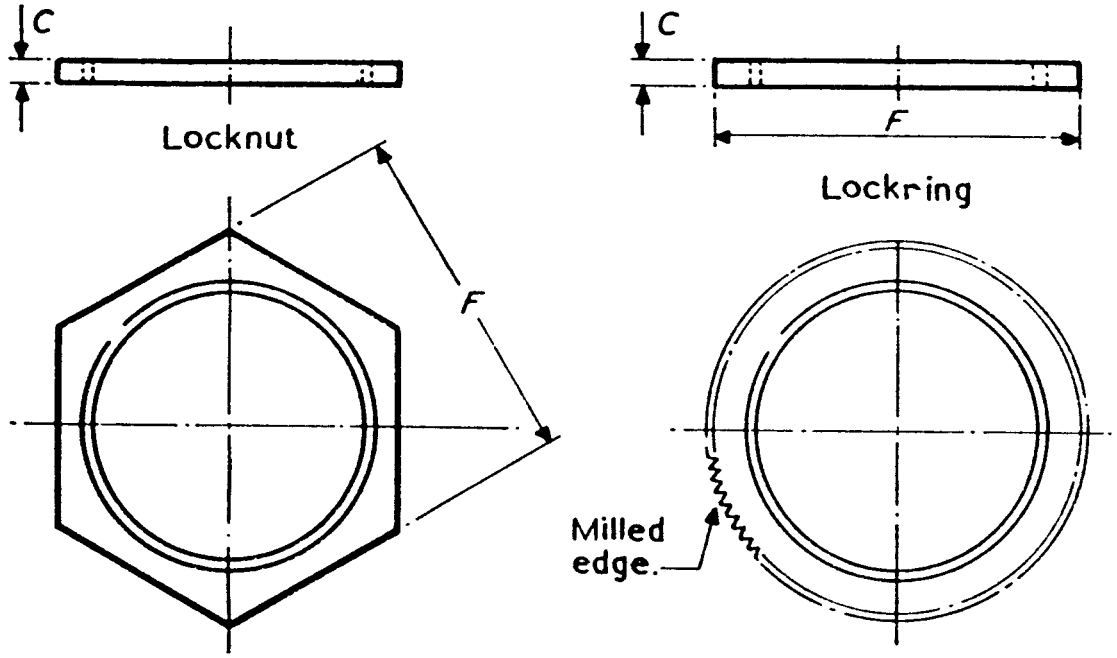
Type reference for male entry bushes of nominal size ¾:
BS 4607.69.¾.
Material: PVC.
All dimensions in inches.

Nominal size	*D* Maximum	*E* Minimum	*F* Nominal	*L* Minimum
⅝	0.406	0.375	0.812	0.500
¾	0.531	0.375	0.812	0.500
1	0.750	0.375	1.090	0.560
1¼	1.000	0.625	1.340	0.870

For thread details see Standard Sheet 72.

blank

Locknuts and lockrings	STANDARD SHEET 70



Type reference for locknuts or lockrings of nominal size ¾:
BS 4607.70.¾.
Material: PVC.
All dimensions in inches.

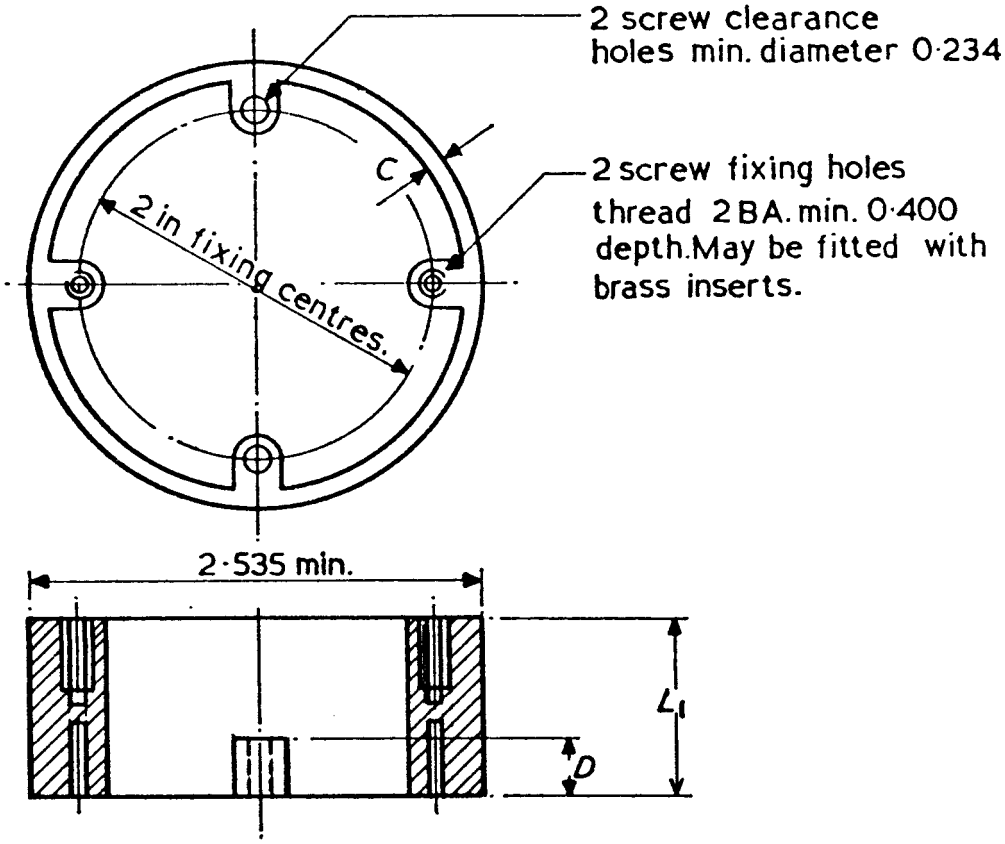
Nominal size	*F* Minimum	*C* Minimum
⅝	0.940	0.125
¾	1.062	0.187
1	1.470	0.187
1¼	1.660	0.250

Nominal size	*F* Minimum	*C* Minimum
⅝	0.750	0.125
¾	0.930	0.187
1	1.250	0.187
1¼	1.500	0.250

For thread details see Standard Sheet 72.

blank

Extension rings	STANDARD SHEET 71



Type reference for extension rings of nominal size ¾:
BS 4607.71.¾.
Material: PVC.
All dimensions in inches.

L_1 Nominal size	C Minimum	D Minimum
½	0.080	0.312
¾	0.080	0.312
1	0.080	0.312
1¼	0.080	0.312

blank

Screw threads	STANDARD SHEET 72

Screwed conduit and fittings shall be threaded in accordance with the screw thread requirements of BS 31, details of which are reproduced in Table A and Table B.

TABLE A

Limiting sizes and tolerances for screw threads on conduit

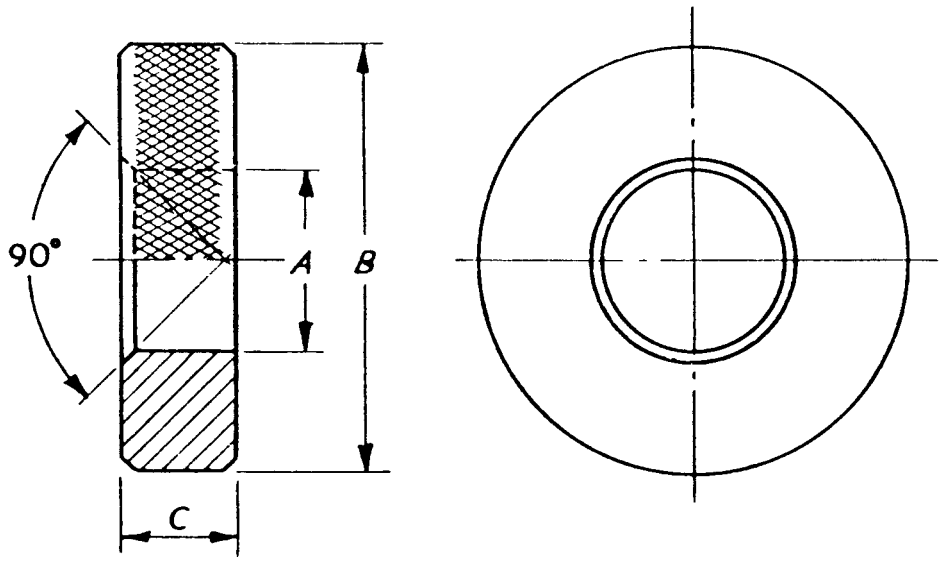
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Nominal outside diameter	Number of threads per inch	Pitch	Nominal depth of thread	Tolerances (see Note)		Full diameter			Effective diameter			Core diameter		
				Pitch	Angle	Maximum	Tolerance	Minimum	Maximum	Tolerance	Minimum	Maximum	Tolerance	Minimum
in		in	in	in	degree	in	in	in	in	in	in	in	in	in
½	18	0.055 56	0.035 55	0.001 8	6.1	0.500 0	0.010 6	0.489 4	0.464 4	0.007 1	0.457 3	0.428 9	0.014 1	0.414 8
⅝	18	0.055 56	0.035 55	0.001 8	6.1	0.625 0	0.010 6	0.614 4	0.589 4	0.007 1	0.582 3	0.553 9	0.014 1	0.539 8
¾	16	0.062 50	0.040 00	0.002 0	5.7	0.750 0	0.011 3	0.738 7	0.710 0	0.007 5	0.702 5	0.670 0	0.015 0	0.655 0
1	16	0.062 50	0.040 00	0.002 0	5.7	1.000 0	0.011 3	0.988 7	0.960 0	0.007 5	0.952 5	0.920 0	0.015 0	0.905 0
1¼	16	0.062 50	0.040 00	0.002 0	5.7	1.250 0	0.011 3	1.238 7	1.210 0	0.007 5	1.202 5	1.170 0	0.015 0	1.155 0

Table B — Limiting sizes and tolerances for screw threads in couplers and fittings

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Nominal outside diameter of conduit	Number of threads per inch	Pitch	Nominal depth of thread	Tolerances (see Note)		Full diameter			Effective diameter			Core diameter		
				Pitch	Angle	Minimum	Tolerance	Maximum	Minimum	Tolerance	Maximum	Minimum	Tolerance	Maximum
in		in	in	in	degree	in	in	in	in	in	in	in	in	in
½	18	0.055 56	0.035 55	0.001 8	6.1	0.500 0	0.014 1	0.514 1	0.464 4	0.007 1	0.471 5	0.428 9	0.010 6	0.439 5
⅝	18	0.055 56	0.035 55	0.001 8	6.1	0.625 0	0.014 1	0.639 1	0.589 4	0.007 1	0.596 5	0.553 9	0.010 6	0.564 5
¾	16	0.062 50	0.040 00	0.002 0	5.7	0.750 0	0.015 0	0.765 0	0.710 0	0.007 5	0.717 5	0.670 0	0.011 3	0.681 3
1	16	0.062 50	0.040 00	0.002 0	5.7	1.000 0	0.015 0	1.015 0	0.960 0	0.007 5	0.967 5	0.920 0	0.011 3	0.931 3
1¼	16	0.062 50	0.040 00	0.002 0	5.7	1.250 0	0.015 0	1.265 0	1.210 0	0.007 5	1.217 5	1.170 0	0.011 3	1.181 3

NOTE Columns 5 and 6 give, for information, the errors in pitch per length of thread engaged and in angle respectively, each of which can be compensated by *half* the tolerance on effective diameter given in column 11. The angle tolerance refers to the sum of the errors on the two half-angles of the thread (nominally 27½) taken regardless of sign.

The errors in pitch and angle shown in the tables may therefore exist together, provided the effective diameter has the maximum value given in column 12. Subject to the same condition, the permissible error in pitch may be increased up to double the values shown in column 5, provided the error in angle is correspondingly reduced, and *vice-versa*.



All dimensions in inches.

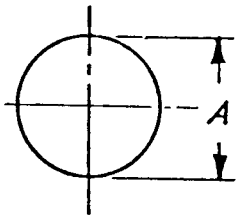
Nominal size of conduit	*A**	*B* Nominal	*C* Nominal
⅝	0.627	1.770	0.472
¾	0.752	1.770	0.472
1	1.002	1.968	0.629
1¼	1.252	2.755	0.708

*Manufacturing tolerance + 0 – 0.000 5

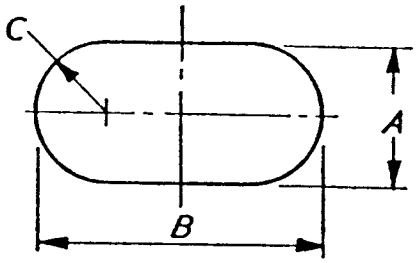
Permissible wear + 0.000 5

It shall be possible to slide gauge completely over conduit.

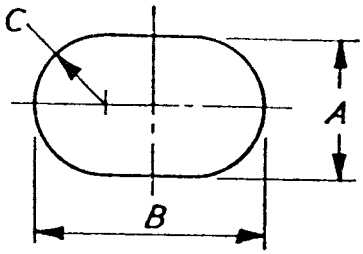
Figure 1 — GO gauge for checking maximum outside diameter of conduits



Bend ball gauge



Conduit gauge for straight conduit



Alternative ball gauge for bends

Manufacturing tolerance $^{+0{\cdot}002}_{-0{\cdot}0}$ Permissible wear $-0{\cdot}000\,5$

All dimensions in inches.

Gauges shall pass through conduit or conduit bend under their own weight.

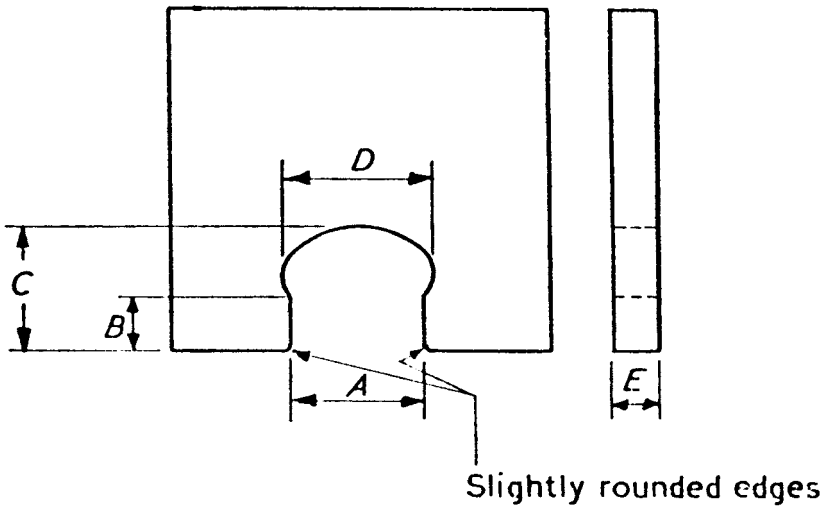
HEAVY GAUGE CONDUIT — LIGHT GAUGE CONDUIT

A	*B*	*C*	Nominal size	*A*	*B*	*C*
0.460	2.0	0.230	⅝	0.510	2.0	0.255
0.575	2.0	0.287	¾	0.640	2.0	0.320
0.815	2.0	0.407	1	0.855	2.0	0.427
1.020	2.5	0.510	1¼	1.110	2.5	0.555

HEAVY GAUGE CONDUIT BENDS — LIGHT GAUGE CONDUIT BENDS

A	*B*	*C*	Nominal size	*A*	*B*	*C*
0.376	0.46	0.188	⅝	0.416	0.50	0.208
0.464	0.55	0.232	¾	0.520	0.60	0.260
0.656	0.75	0.328	1	0.688	0.80	0.344
0.824	0.96	0.412	1¼	0.888	1.00	0.444

Figure 2 — Gauges for checking minimum inside diameter of conduit and bends

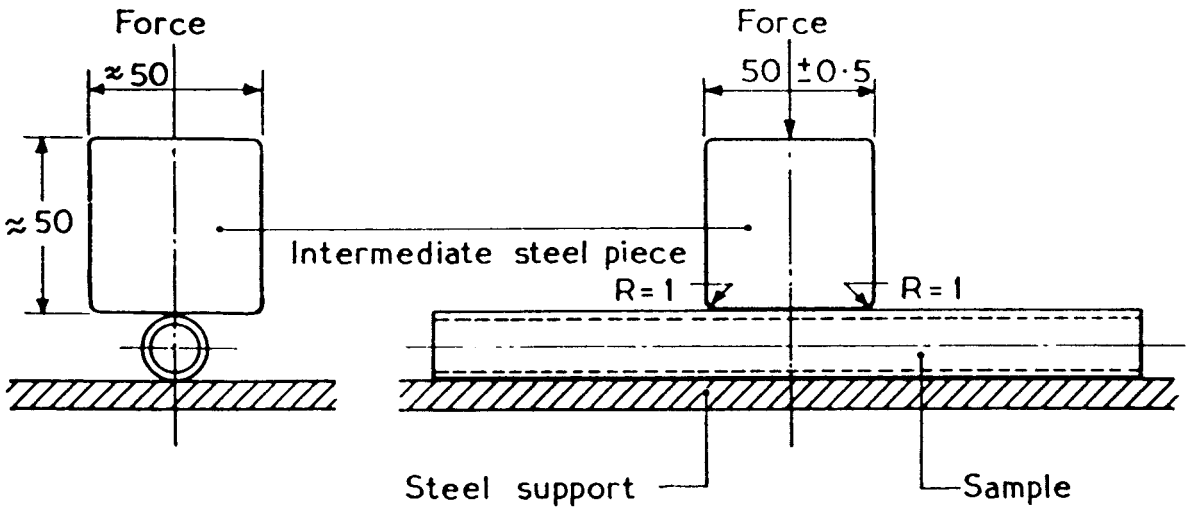


All dimensions in inches.

Nominal size of conduit	*A*	*A* Manufacturing tolerance	*A* Permissible wear	*B* Nominal	*C* Nominal	*D* Nominal	*E* Nominal
⅝	0.613	+ 0 – 0.000 5	+ 0.000 5	0.314	0.669	0.708	0.354
¾	0.738	+ 0 – 0.000 5	+ 0.000 5	0.393	0.905	1.062	0.354
1	0.988	+ 0 – 0.000 5	+ 0.000 5	0.393	0.905	1.140	0.354
1¼	1.234	+ 0 – 0.000 5	+ 0.000 5	0.472	1.102	1.417	0.354

It shall not be possible to pass the gauge over the conduit in any position without considerable or undue force.

Figure 3 — Gauge for checking minimum outside diameter of conduits

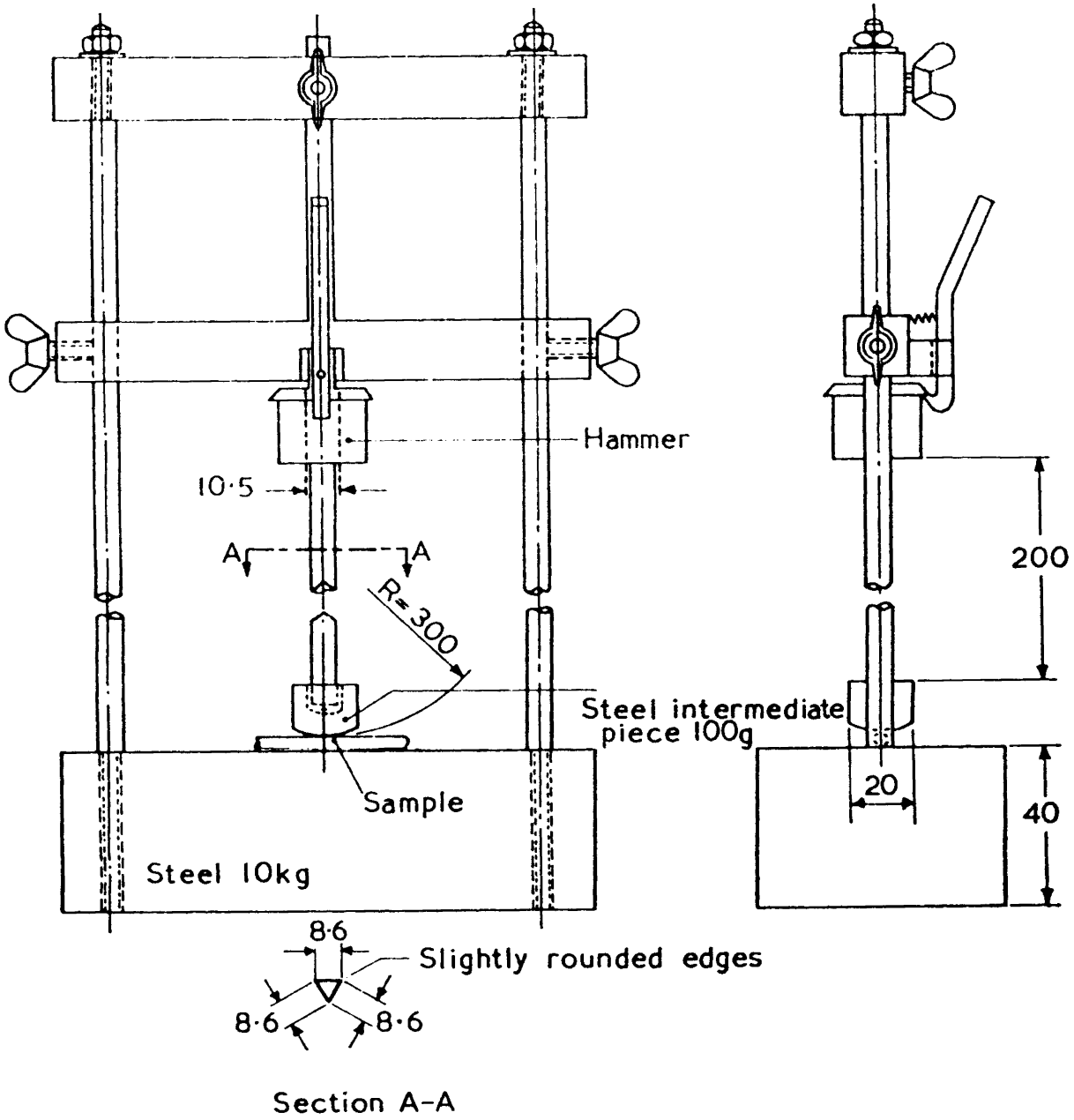


Dimensions in mm.

Dimensions shown are for testing conduits of Type AN material. For testing conduits of Type AH material the intermediate steel piece is 75 mm × 75 mm × 75 mm.

The sketch is not intended to govern design except as regards the dimensions shown.

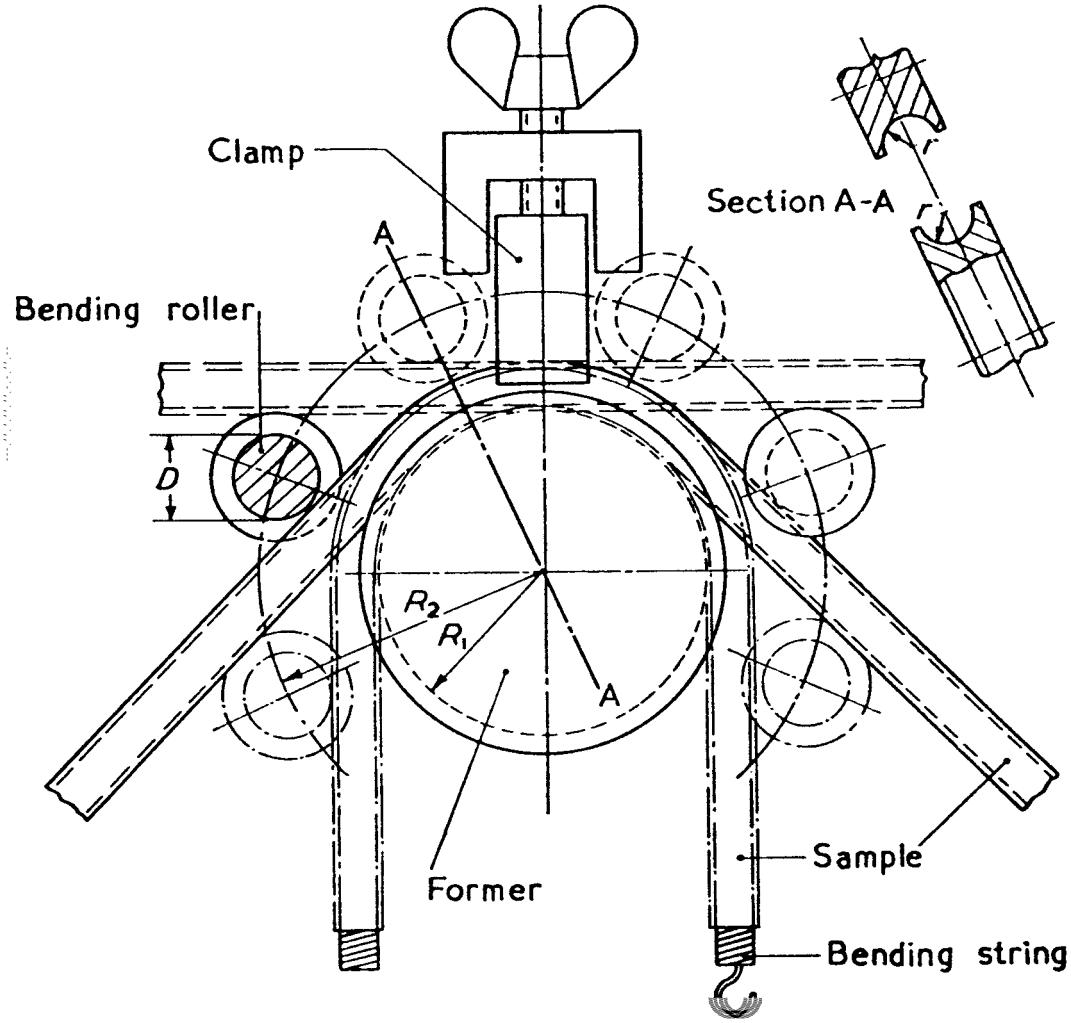
Figure 4 — Arrangement for compression test



Dimensions in mm.

The sketch is not intended to govern design except as regards the dimensions shown

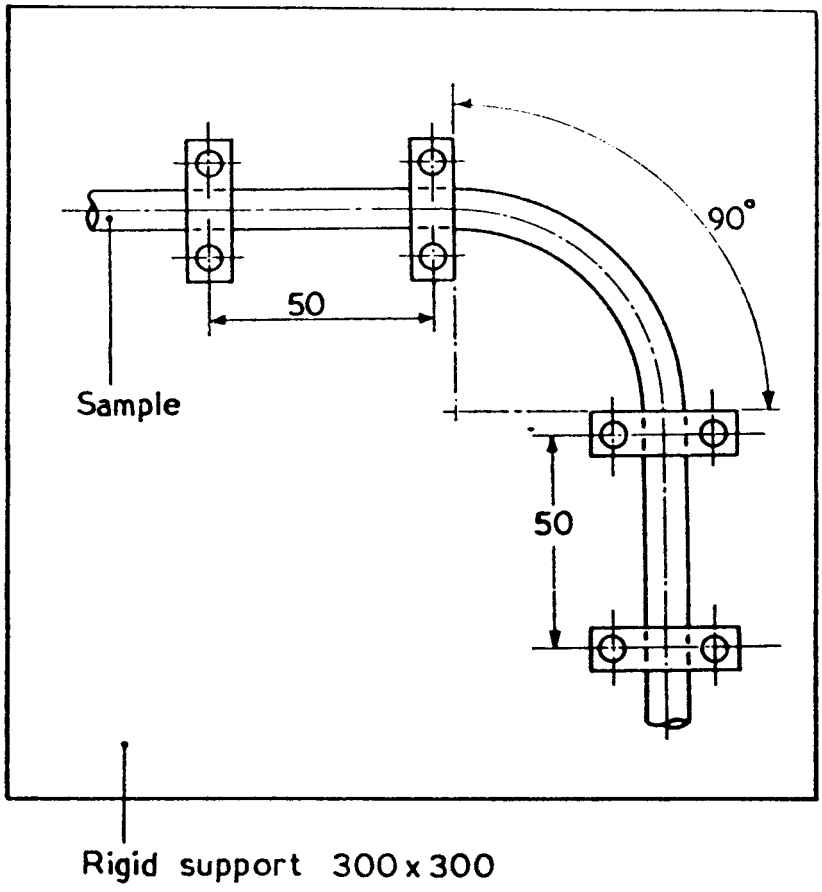
Figure 5 — Impact test apparatus



Nominal size of conduit	Radius of bottom of groove of former R_1	Radius of arc traced out by centres of bending rollers R_2	Radius of groove of bending roller and former r	Diameter of bottom of groove of bending rollers D
	in	in	in	in
⅝	1.875	3.285	0.318	0.944
¾	2.250	3.945	0.381	1.140

The sketch is not intended to govern design except as regards the dimensions shown.

Figure 6 — Bending tool

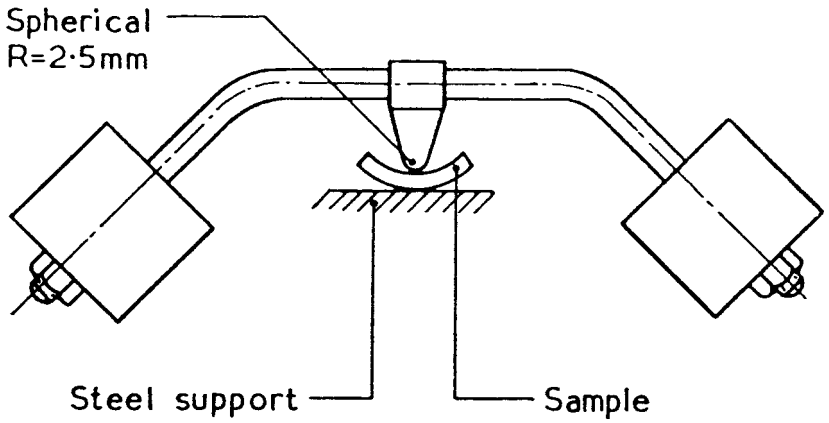


Dimensions of sketch in mm.

The sketch is not intended to govern design except as regards the dimensions shown.

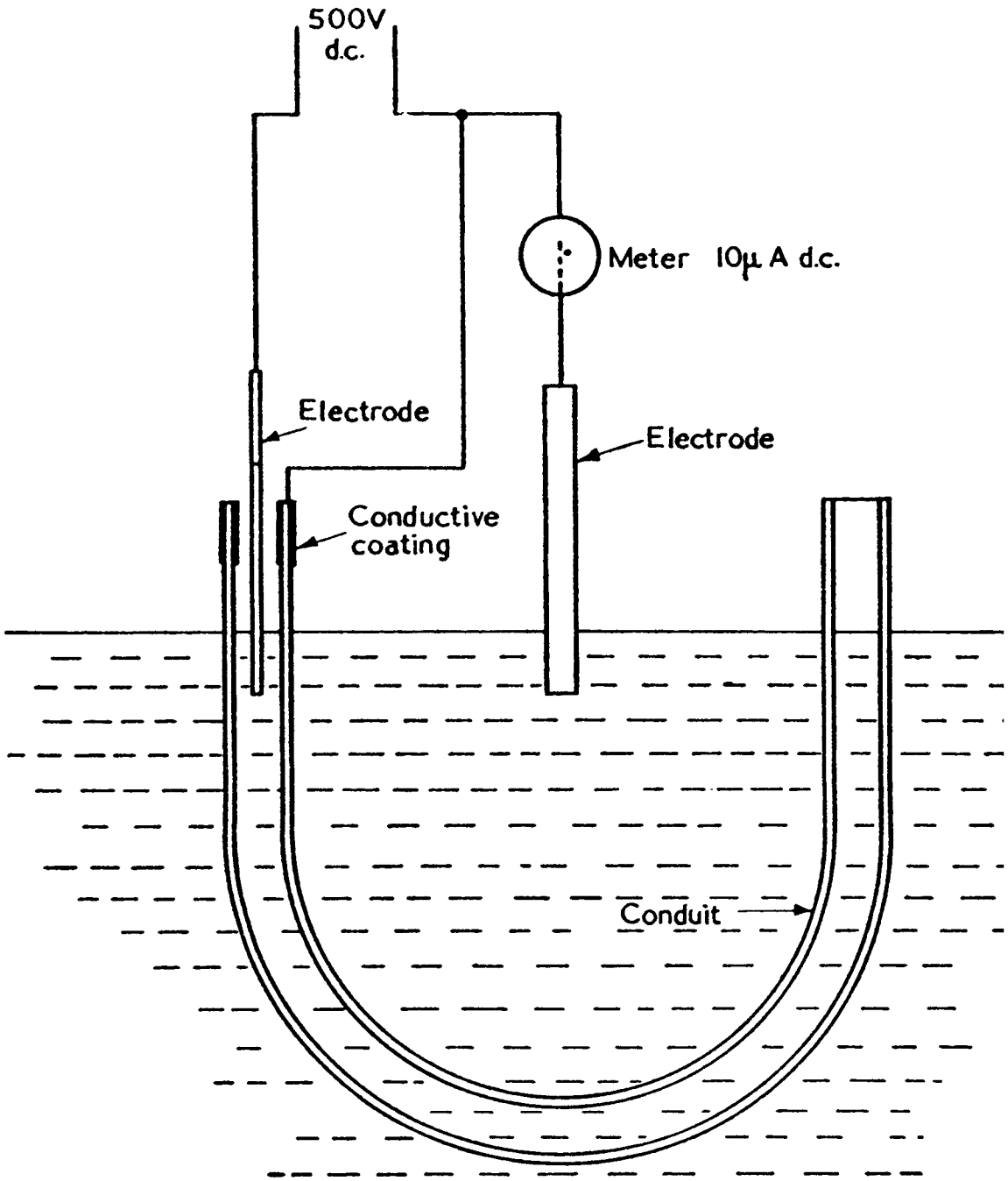
Nominal size of conduit	Radius of bend *R*
	in
⅝	1.875
¾	2.250

Figure 7 — Arrangement for collapse test



The sketch is not intended to govern design except as regards the dimensions shown.

Figure 8 — Ball-pressure apparatus



Remove sharp edges and burrs.

Figure 9 — Circuit diagram of insulation test for conduit

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