BRITISH STANDARD

**BS 4568-1: 1970**

*Incorporating Amendment Nos. 1 and 2*

## Specification for

# Steel conduit and fittings with metric threads of ISO form for electrical installations —

## Part 1: Steel conduit, bends and couplers

UDC 621.315.67

# 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 Supervising Electrical Engineers*
British Electrical and Allied Manufacturers' Association*
British Railways Board
British Radio Equipment Manufacturers' Association
Crown Agents for Overseas Governments and Administrations
Department of Employment and Productivity*
Electric Cable Makers' Confederation
Lighting Industry Federation Limited
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*
Electronic Engineering Association
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Ministry of Defence, Army Department
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National Physical Laboratory (Ministry of Technology)
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
British Electric Conduit Systems Manufacturers
British Plastics Federation
Light Metal Founders' Association
Confederation of British Industry
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
27 February 1970



The following BSI references relate to the work on this standard:
Committee reference ELE/80
Draft for comment D65/12020

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**Amendments issued since publication**

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| 1132 | March 1973 | |
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| | | |
| | | |

# Contents

# Foreword

This British Standard has been prepared under the authority of the Electrical Industry Standards Committee and is in close agreement with Publication 23, "*Steel conduit and fittings for electrical installations*", issued by the International Commission on rules for the approval of Electrical Equipment (CEE). The 19 and 20 mm sizes of the 1962 edition of CEE 23 will be replaced by a single 20 mm size when it is next revised.

An important feature of the CEE Specification is the adoption of a series of conduit diameters which will also apply to the conduit entries into all types of electrical enclosures and fittings.

This standard is similar in scope to BS 31, "*Steel conduit and fittings for electrical wiring*" and specifies both plain and screwed conduit and fittings.

The wall thickness of the conduit, however, has in some cases been reduced for that specified in BS 31 for conduit of similar external diameters owing to the employment of a 60° thread on the tube based on the ISO thread form.

Conduit and fittings described in this standard will be alternative to, and eventually supersede, those complying with BS 31, with the ultimate object of unification with the standards of other European countries.

Additionally, when preparing this standard, full consideration was given to proposals received for revisions needed to BS 31, and, where desirable, the necessary amendments have been incorporated.

This standard has been divided into two parts:

— *Part 1: Steel conduit, bends and couplers;*

— *Part 2: Steel conduit fittings and components.*

This part of the standard specifies requirements for conduit and those bends and couplers which have been standardized internationally and are covered by CEE Specification No. 23.

Part 2 specifies fittings and components not at present standardized internationally, but which have found wide practical application.

In both parts, the range of conduit diameters included is from 16 mm to 32 mm outside diameter. Consideration will be given to the inclusion of larger sizes when they have been standardized internationally.

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 20 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 part of this British Standard specifies requirements for steel conduits, and for conduit fittings of steel or malleable cast iron, intended for the protection of cables in electrical installations.

## 2 General requirements

**2.1** Conduits and fittings shall be so designed and constructed that they are not adversely affected by transport and storage, and assure reliable mechanical protection to the cables.

**2.2** Conduit fittings shall be either of the screwed type, which are threaded for connection to heavy-gauge conduits, or of the plain non-screwed type which are primarily designed for use with non-screwed light gauge conduit.

**2.3** TEST. In general, compliance with **2.1** and **2.2** shall be checked by carrying out all the tests specified.

## 3 General conditions for the tests described in Appendix A

**3.1** The tests specified in this standard are type tests.

**3.2** Unless otherwise specified, tests shall be made at an ambient temperature of 20 ± 5 °C.

**3.3** Each test shall be made on three samples. For conduits, three manufactured lengths taken at random are required, the samples for the various tests being taken, one from each length.

**3.4** Conduits and fittings shall be deemed not to comply with this standard if more than one sample fails any one of the tests. If one sample fails in a test, that test shall be repeated on a second set of three samples, all of which shall comply with the repeated tests. If any sample fails in the retest, then all the samples shall be deemed to have failed to comply with the standard.

For conduits, the second set of samples shall be taken from other lengths.

NOTE The applicant may submit, together with the first set of conduit samples, the additional set which may be required 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 is not submitted at the same time, a failure of one sample will entail a rejection.

## 4 Classification

**4.1** Conduits and fittings are classified, as follows, according to the method of assembly with the fittings:

1) Plain conduits and fittings.

2) Screwed conduits and fittings.

**4.2** Conduit and fittings are further classified, as follows, according to the type of protection applied:

| | |
|---|---|
| Class 1. Light protection both inside and outside. | *Example*: priming paint. |
| Class 2. Medium protection both inside and outside. | *Example*: stoved enamel; air-drying paint. |
| Class 3. Medium heavy protection. Inside as Class 2, outside as Class 4. | *Example*: stoved enamel inside. Sherardized outside. |
| Class 4. Heavy protection both inside and outside. | *Example*: hot-dip zinc coating, sherardizing. |

## 5 Marking

**5.1** Conduits shall be marked with the following:

1) The name or identification mark of the maker or responsible vendor.

2) The number of this British Standard.

3) The class of finish.

The marking shall be near to one end of each conduit length.

**5.2** Fittings, excluding couplers supplied with a length of conduit, shall be identified either by marking on the fittings or on the package containing them as follows:

1) The name or identification mark of the maker, or responsible vendor.

2) The number of this British Standard.

3) The type reference (see Note below) or description.

4) The material from which the fitting is made or a suitable abbreviation.

**5.3** The marking, whether on the fitting or the package, shall be easily legible. If on the conduit or fitting it shall also be durable.

**5.4** TEST. Compliance with the requirements of **5.1** to **5.3** shall be checked by inspection and, for marking on conduit and fittings, by the durability of marking test described in Appendix **A.1**.

NOTE 1 The type reference comprises the number of the British Standard, the Standard Sheet number for the fitting, and the size in mm. Example, BS/0000/7/25.

## 6 Dimensions

**6.1 Conduit**. The outside diameters, wall thicknesses and tolerances for the manufacture of conduits shall be as stated in Standard Sheets 1 and 2. Screw threads shall comply with the basic dimensions given in Figure 1.

**6.1.1** TEST. Compliance shall be checked as follows:

1) *External diameter* by using gauges as shown in Figure 4.

2) *Ovality* by using gauges as shown in Figure 5.

3) *Screw threads* by using gauges as shown in Figure 2.

4) *Wall thickness* by taking the average weights of three manufactured lengths of conduit and then comparing with the table of weights as given on Standard Sheets 1 or 2, as appropriate.

**6.2 Fittings**. Fittings shall comply with the Standard Sheets detailed below:

| | |
|---|---|
| Couplers, plain: | Sheet No. 3 |
| Bends, plain: | Sheet No. 4 |
| Bends, plain internally: | Sheet No. 5 |
| Couplers, screwed: | Sheet No. 6 |
| Bends, externally screwed: | Sheet No. 7 |

Screw threads shall comply with the basic dimensions given in Figure 1.

**6.2.1** TEST. Compliance shall be checked by measurement and, for screw threads, by using gauges shown in Figure 2 and Figure 3.

**6.3 Tolerances**. All dimensions on Standard Sheets except those for which tolerances are specifically stated, or for which maxima and/or minima are given, shall be regarded as nominal dimensions and subject to a tolerance of plus or minus 5 %.

**6.3.1** When the wall thickness is given as a nominal dimension (with or without tolerances) such thickness applies to the material from which the product is made. All other dimensions apply to the finished product.

## 7 Construction

**7.1** Conduits shall be solid drawn or seamed by welding.

**7.2** Conduits shall show no appreciable unevenness and their interior and ends shall be free from burrs, fins and the like which may cause damage to cables.

**7.3** The interior and ends of fittings shall be free from burrs, fins and the like. Surfaces and edges over which the cables are likely to be drawn shall be smooth and well rounded.

**7.4** TEST. Compliance with the requirements of **7.1** and **7.2** shall be checked by inspection. In case of doubt, the sample shall be cut into short pieces and, if necessary, these shall be cut longitudinally. Slight protrusions from welded seams shall be neglected if they are unlikely to cause damage to cables.

## 8 Mechanical properties of conduit

**8.1** Conduits when bent shall show no cracks and shall not be deformed to such an extent that introduction of the cables becomes difficult, or that they are damaged when drawing in.

**8.1.1** TEST. Compliance shall be checked by inspection and by the bending test described in Appendix **A.2**, except that plain conduits exceeding 25 mm diameter shall not be subjected to the bending test.

## 9 Resistance to corrosion

**9.1** Conduit and fittings, excluding screw threads, shall be adequately protected against corrosion, both inside and outside.

**9.1.1** TEST. Compliance shall be checked by the appropriate test or tests described in Appendix **A.3**, which describes tests for light, medium, and heavy protection.

For Class 3 conduit and fittings, the inside and outside protective coatings shall separately comply with the relevant tests described in Appendix **A.3**.

Conduit and fittings may be split to the extent considered necessary to allow adequate examination of their interior surfaces.

## 10 Electrical continuity

**10.1** Fittings intended for an installation where an electrically continuous path is required throughout the assembly of conduit and fittings shall be so constructed that they comply with the requirements described in Appendix **A.4**.

**10.2** Fittings for plain conduit require special devices to ensure permanent and reliable metallic contact between fitting and conduit. In some designs this may involve removal of the protective finish from the conduit and fitting at the point where metallic contact is to be established.

## 11 Test for fittings of malleable cast iron

Fittings manufactured from malleable cast iron shall comply with the test requirements described in Appendix **A.5**.

# Appendix A Tests of conduits and fittings

## A.1 Test for durability of marking

Durability shall be checked by rubbing the marking by hand for 15 seconds with a piece of cloth soaked with water and again for 15 seconds with a piece of cloth soaked with petroleum spirit. After the test the marking shall remain legible.

NOTE Marking may be achieved by, for example, stamping, printing, adhesive labels, or waterslide transfers.

## A.2 Test of mechanical properties of conduit

The conduits are bent through 90° using a bending tool having a radius equal to six times the nominal size.

For conduits not exceeding the nominal size of 25 mm, a tool shown in Figure 6 shall be used.

For conduits exceeding the nominal size of 25 mm an appropriate bending machine shall be used.

For conduits with welded seam, six samples shall be tested, three with the seam on the outside of the bend, and three with the seam on the flank.

After the test, neither the basic material of the conduits, nor the coating of conduits with medium or heavy protection, shall show any cracks visible to the naked eye. The seams, if any, shall not have opened, and the section of the conduit shall not have distorted unduly.

The distortion of the section shall be judged as follows:

The bent conduit shall be held in a vertical plane, the bend being symmetrically disposed in relation to the horizontal. It shall then be possible to roll a polished steel ball, having a diameter as specified below, through the conduit.

| Nominal size | Diameter of test ball | | Tolerance (Plus or minus) |
|---|---|---|---|
| | Plain conduit | Screwed conduit | |
| mm | mm | mm | mm |
| 16 | 10.30 | 9.50 | 0.02 |
| 20 | 14.00 | 13.00 | 0.02 |
| 25 | 17.00 | 16.00 | 0.02 |
| 32 | — | 22.00 | 0.02 |

The diameters of the balls have been so chosen that standardized bearing balls can be used.

## A.3 Tests for resistance to corrosion

**A.3.1** *Light protection.* Samples of conduit with light protection shall be slowly bent round a smooth cylindrical mandrel having a radius equal to:

1) Ten times the normal conduit diameter for conduit not exceeding a nominal diameter of 25 mm.

2) Twelve times the nominal diameter for other conduits.

A sheet of cardboard or the like, about 3 mm thick shall be placed between the conduit and the mandrel. After this test the coating of the conduit shall show no sign of damage. Fittings shall be inspected for completeness of covering by the protective coating, both inside and outside.

**A.3.2** *Medium protection.* Samples of conduit shall be bent as described in **A.2**, cleaned with a piece of wadding soaked in benzine and then dried. The bent part of each sample shall then be immersed in a solution of 0.75 % potassium ferricyanide ($K_3Fe(CN)_6$) and 0.25 % ammonium persulphate($NH_4)_2S_2O_8$) in water and a quantity of about 0.1 % of a suitable wetting agent, for instance a sodium salt of an alkylnaphthaline sulphonic acid, shall be added.

Fittings with medium protection shall be cleaned in the manner described above for conduit and shall then be totally immersed in the solution. The solution and samples are maintained at a temperature of 20 ± 1 °C.

Each sample shall be tested separately, a fresh solution being used each time.

After immersion for 5 minutes, the samples shall be removed from the solution and left to dry at room temperature in air. After completion of the test as described above, the samples shall show no more than two blue coloured spots on each square centimetre of the surface, and no blue spot shall have a dimension larger than 1.5 mm. Traces of rust on sharp edges, screw threads and machined surfaces, also any yellowish film removable by rubbing, shall be ignored.

**A.3.3** *Heavy protection.* Samples of conduit shall be bent as described in **A.2**, degreased by immersion in trichloroethylene in accordance with BS 580[1)] for 10 minutes and wiped dry with a piece of soft cloth. They shall then be immersed in a 2 % solution of sulphuric acid in water for 15 seconds, thoroughly cleaned in running water and again wiped dry with a piece of clean soft cloth.

[1)] BS 580 "*Trichloroethylene*".

The bent part of each sample shall then be immersed in a solution of copper sulphate ($CuSO_4.5H_2O$) in distilled water, having a specific gravity of 1.186 at 20 °C.

Fittings with heavy protection shall be degreased as described above for conduit and then totally immersed in the solution. The solution and the samples shall be maintained at a temperature of 20 ± 1 °C, without stirring.

NOTE The solution is made by dissolving 360 grammes of crystalline copper sulphate in 1 litre of distilled water, and neutralizing with copper carbonate or copper hydroxide (about 1 g/l). The specific gravity is then checked and adjusted as necessary.

The container shall be such that it will not react with the solution and shall be of such a size as to provide clearance of at least 25 mm between the walls thereof and the sample.

Each sample shall be immersed four times in succession in the same solution, each time for 1 minute. A fresh solution shall be used for each sample. After each immersion, the sample shall immediately be cleaned in running water with a brush to remove any black deposit. The sample shall then be wiped dry with a piece of clean soft cloth and, except after the fourth immersion, returned to the solution. Care should be taken to clean out all holes and pockets.

After the test, the sample shall show no precipitation of copper which cannot be scrubbed off in running water, if necessary after immersion in a 10 % solution of hydrochloric acid in water for 15 seconds.

Traces of copper precipitation on screw threads, sharp edges and machined surfaces may be ignored.

### A.4 Requirements for the efficiency of the conduit/fitting conducting path

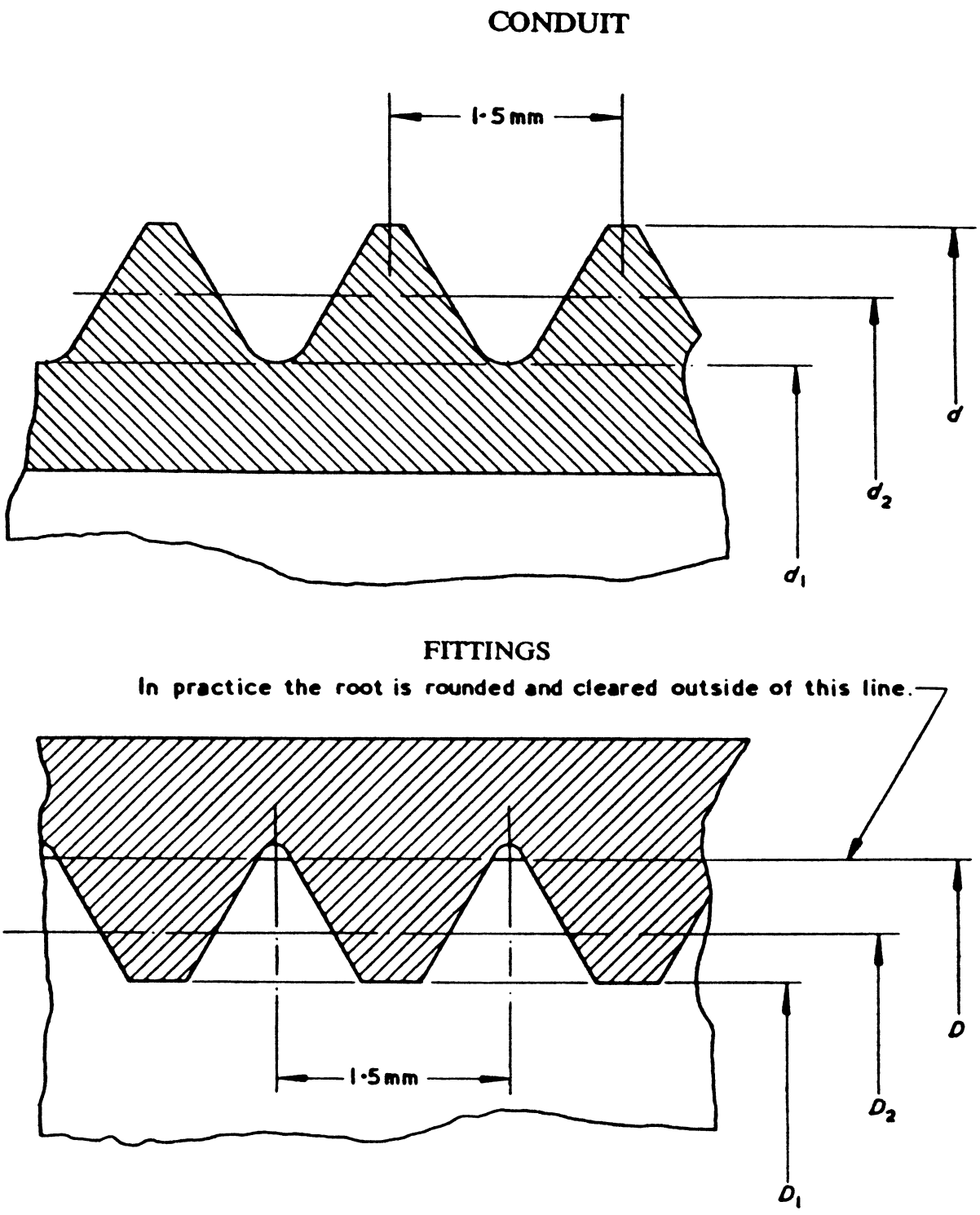
An arrangement of conduit and fittings consisting of ten plain (i.e. non-screwed) conduit lengths coupled together by fittings not less than 25 mm apart shall be assembled (with their continuity devices, where applicable) in the manner of use as designed.

They shall then be tested for continuity between the ends of the assembly. The resistance so measured shall not exceed 0.05 Ω.

### A.5 Test for malleable cast iron fittings

Test pieces are cut from the fitting and shall be the configuration of half, or slightly less than half, of an open ended cylinder. Alternatively, in the case of a coupler, the whole fitting may conveniently be used.

The test sample shall be capable of being pressed flat without showing signs of cracking when compressed diametrically between two smooth parallel faces having a width of not less than half the original circumference of the specimen, and a length not less than the length of the specimen.




For dimensions $d$, $d_1$, $d_2$, and $D$, $D_1$, $D_2$ see table.

**Figure 1 — Diametral dimensions of screw threads**

## Table of thread details for Figure 1
## Based upon British Standard BS 3643-3 Table 6 and Table 7
Conduit Tolerance class 8g (Free fit)

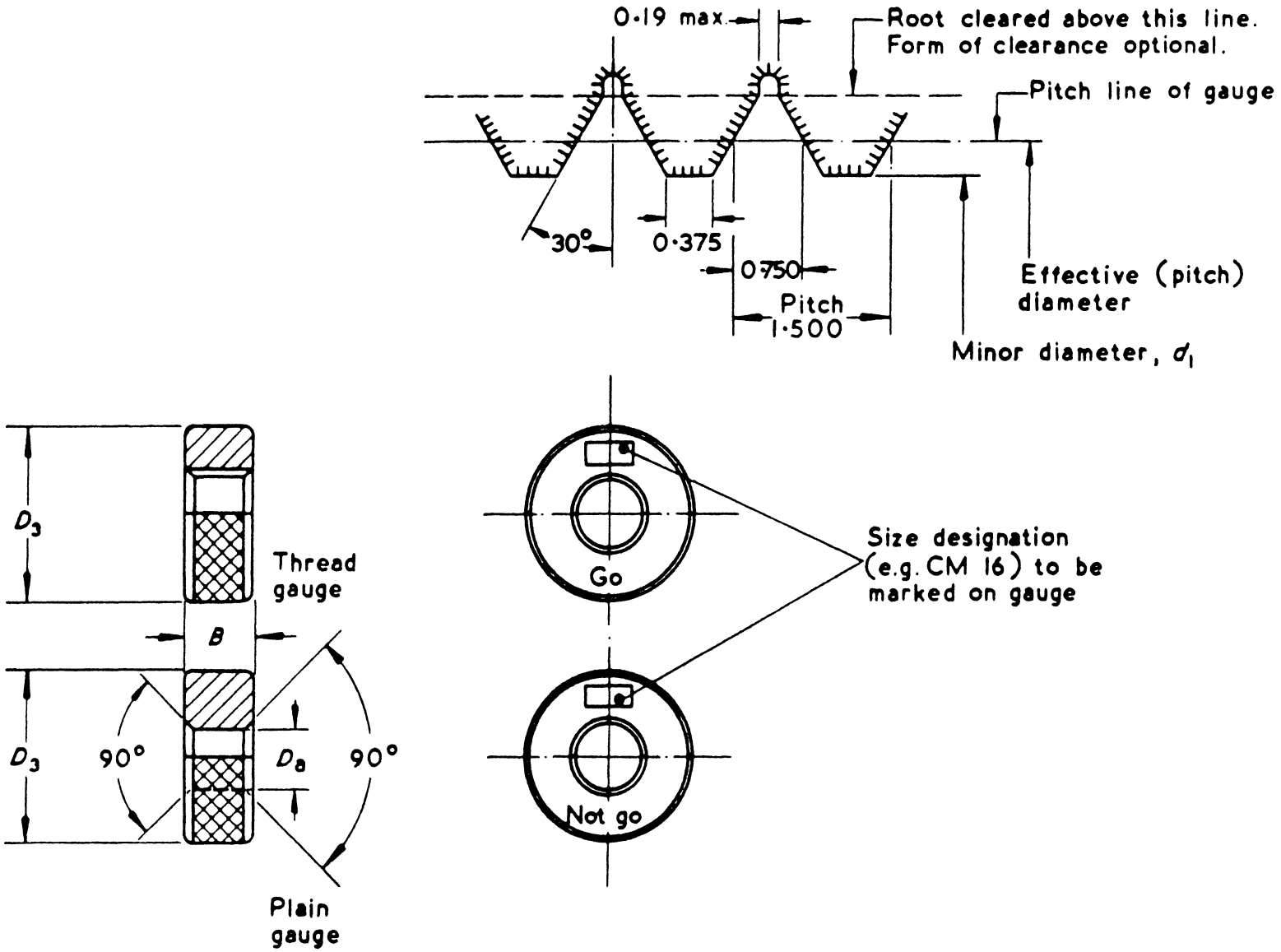
All dimensions are in millimetres.

| Size | Major diameter $D$ | | | Effective diameter $d_2$ | | | Minor diameter $d_1$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | Max. | Tolerance | Min. | Max. | Tolerance | Min. | Max. | Tolerance | Min. |
| 16 | 15.968 | 0.375 | 15.593 | 14.994 | 0.224 | 14.770 | 14.127 | 0.332 | 13.795 |
| 20 | 19.968 | 0.375 | 19.593 | 18.994 | 0.224 | 18.770 | 18.127 | 0.332 | 17.795 |
| 25 | 24.968 | 0.375 | 24.593 | 23.994 | 0.236 | 23.758 | 23.127 | 0.344 | 22.783 |
| 32 | 31.968 | 0.375 | 31.593 | 30.994 | 0.236 | 30.758 | 30.127 | 0.344 | 29.783 |

**Fittings Tolerance class 7H (free fit)**

| Size | Major diameter $D$ | Effective diameter $D_2$ | | | Minor diameter $D_1$ | | |
|---|---|---|---|---|---|---|---|
| | Min. | Max. | Tolerance | Min. | Max. | Tolerance | Min. |
| 16 | 16.000 | 15.262 | 0.236 | 15.026 | 14.751 | 0.375 | 14.376 |
| 20 | 20.000 | 19.262 | 0.236 | 19.026 | 18.751 | 0.375 | 18.376 |
| 25 | 25.000 | 24.276 | 0.250 | 24.026 | 23.751 | 0.375 | 23.376 |
| 32 | 32.000 | 31.276 | 0.250 | 31.026 | 30.751 | 0.375 | 30.376 |

NOTE The above thread details are given for information only. For the purposes of the specification, compliance shall be checked by the use of the gauges shown in Figure 2 and Figure 3.




For dimensions see table.

It shall be possible, without undue force, to screw the thread gauge on to the conduit. It shall not be possible, without undue force, to pass the plain gauge over the thread.

**Figure 2 — Gauges for screw threads on conduits**

## Table of dimensions of gauges on Figure 2

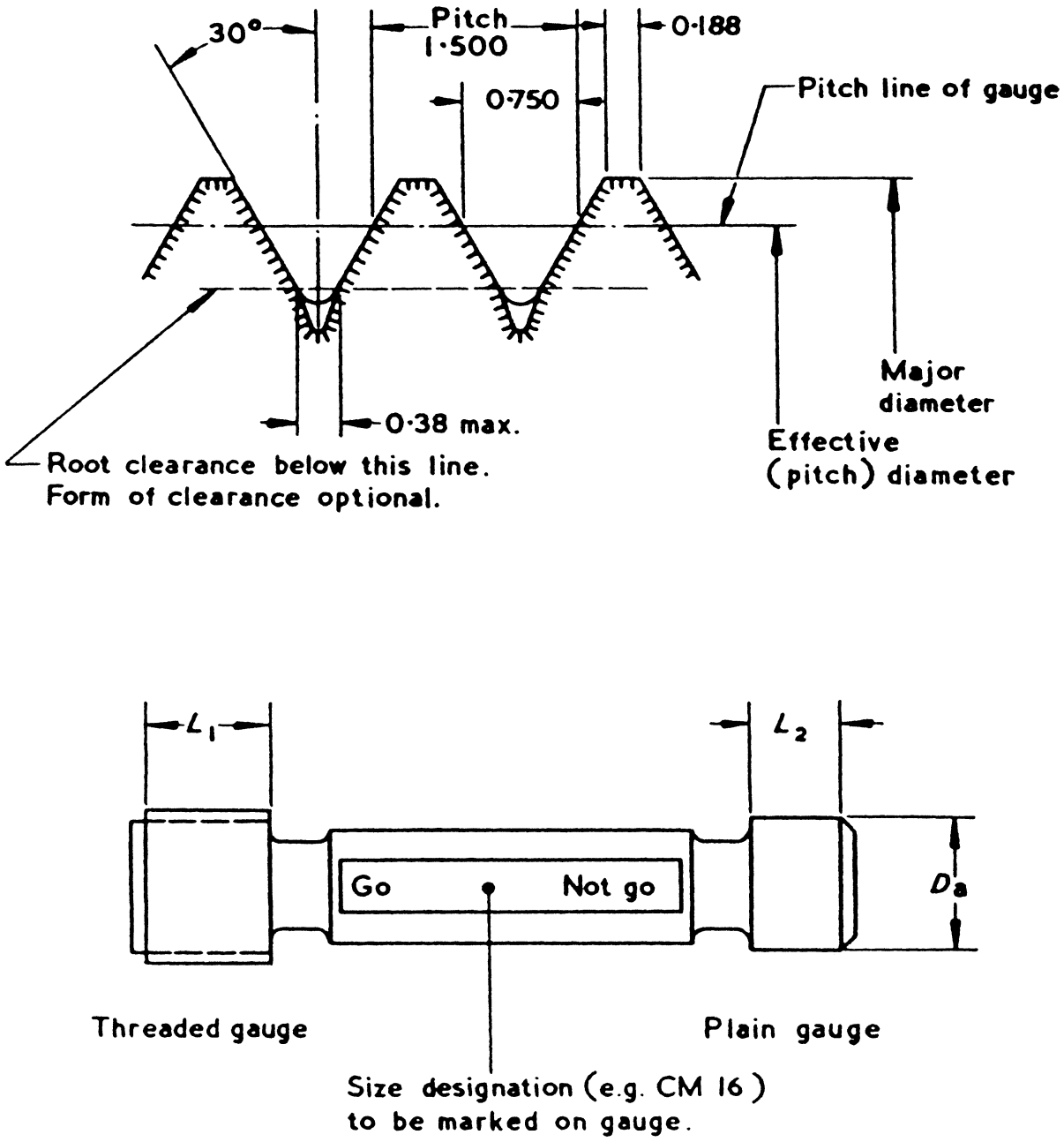
(Profile as Figure 2)

All dimensions are in millimetres.

| Designation of gauge | Nominal size of conduit | "GO" threaded ring gauge | | | | | | "NOT GO" plain ring gauge | | Overall diameter of gauge $D_3$ | Thickness of gauge $B$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Minor diameter $d_1$ | Tolerance | Pitch (effective) diameter | Tolerance | Pitch[a] tolerance | Tolerance on flank angle (Minutes) | Diameter of hole $D_a$ | Tolerance | | |
| CM16 | 16 | 14.344 | ± 0.012 | 14.994 | +0.000 –0.024 | 0.005 | ± 12 | 15.593 | ± 0.015 | 45 | 12 |
| CM20 | 20 | 18.344 | ± 0.012 | 18.994 | +0.000 –0.024 | 0.005 | ± 12 | 19.593 | ± 0.015 | 45 | 12 |
| CM25 | 25 | 23.344 | ± 0.012 | 23.994 | +0.000 –0.024 | 0.005 | ± 12 | 24.593 | ± 0.015 | 60 | 16 |
| CM32 | 32 | 30.344 | ± 0.012 | 30.994 | +0.000 –0.024 | 0.005 | ± 12 | 31.593 | ± 0.015 | 63 | 16 |

NOTE The tolerances of these gauges are as shown in the relevant sections of BS 919-3.

[a] The pitch tolerance is the maximum permissible error between any two threads over the full length of the gauge, irrespective of sign.




For dimensions see table.

It shall be possible to screw the gauge into the fitting without using undue force. It shall not be possible, without undue force, to insert the plain gauge into the fitting.

NOTE This drawing does not purport to show unessential constructional details. For example, the two ends of the gauge may be separate units.

**Figure 3 — Gauges for screw threads in fittings**

## Table of dimensions of gauges on Figure 3

(Profile as Figure 3)

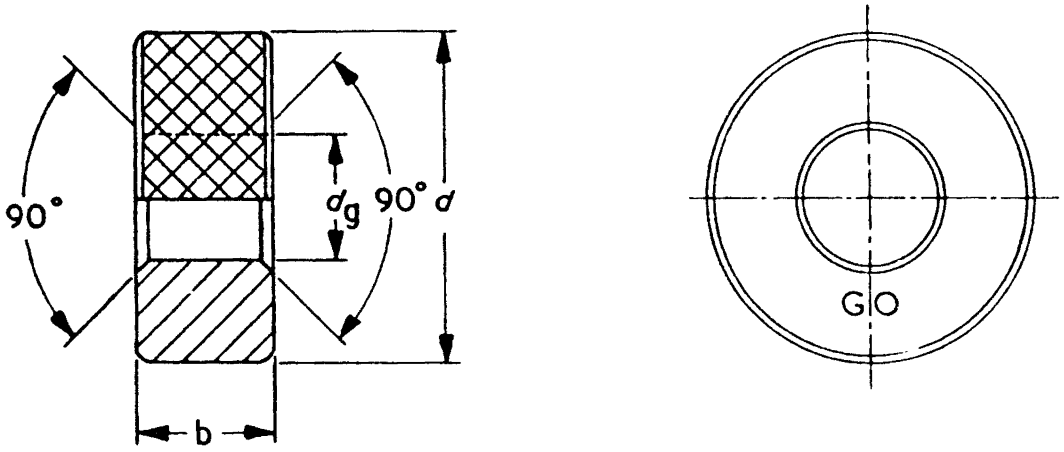
All dimensions are in millimetres.

| Designation of gauge | Nominal size of fitting | "GO" threaded plug gauge | | | | | | "NOT GO" plain gauge | | Length of gauging portion of threaded gauge $L_1$ | Length of gauging portion of plain gauge $L_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Major diameter | Tolerance | Effective (pitch) diameter | Tolerance | Pitch tolerance[a] | Tolerance on flank angle (Minutes) | Diameter of plug $D_a$ | Tolerance | | |
| CM16 | 16 | 16.000 | +0.030<br>+0.002 | 15.026 | +0.023<br>+0.009 | 0.005 | ± 12 | 14.751 | ± 0.008 | 18 | 8 |
| CM20 | 20 | 20.000 | +0.030<br>+0.002 | 19.026 | +0.023<br>+0.009 | 0.005 | ± 12 | 18.751 | ± 0.008 | 20 | 8 |
| CM25 | 25 | 25.000 | +0.030<br>+0.002 | 24.026 | +0.023<br>+0.009 | 0.005 | ± 12 | 23.751 | ± 0.008 | 22 | 9 |
| CM32 | 32 | 32.000 | +0.030<br>+0.002 | 31.026 | +0.023<br>+0.009 | 0.005 | ± 12 | 30.751 | ± 0.008 | 25 | 10 |

NOTE The tolerances of these gauges are as shown in the relevant sections of BS 919-3.

[a] The pitch tolerance is the maximum permissible error between any two threads over the full length of the gauge, irrespective of sign.

Size designation (e.g. CM 16)
to be marked on gauge.

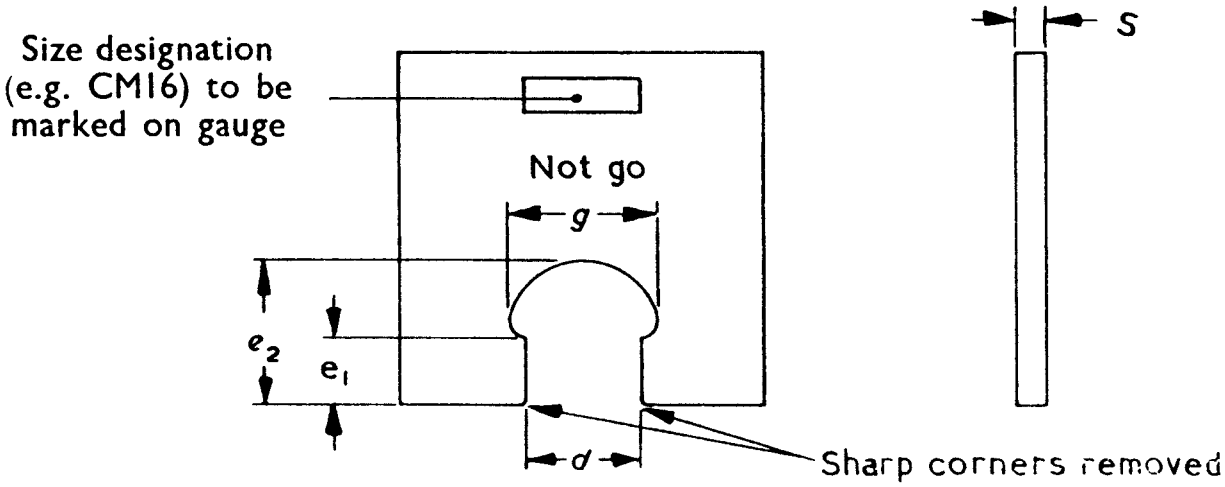



It shall be possible, without undue force, to slide the gauge completely over the conduit.

All dimensions are in millimetres.

| Designation of gauge | Nominal size of conduit | $d_g$ | Manufacturing tolerance | Admissible wear | $b$ | $d$ |
|---|---|---|---|---|---|---|
| CM16 | 16 | 16.04 | – 0.01 | + 0.01 | 12 | 45 |
| CM20 | 20 | 20.04 | – 0.01 | + 0.01 | 12 | 45 |
| CM25 | 25 | 25.04 | – 0.01 | + 0.01 | 16 | 60 |
| CM32 | 32 | 32.04 | – 0.01 | + 0.01 | 18 | 70 |

**Figure 4 — Gauges for checking the outside diameter of conduits**

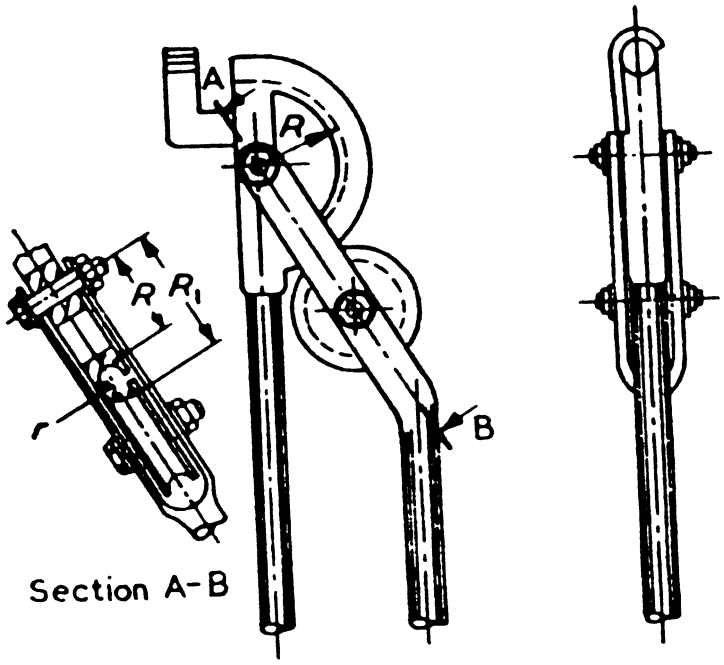



It shall not be possible, without undue force, to pass the gauge over the conduit at any point.

All dimensions are in millimetres.

| Designation of gauge | Nominal size of conduit | $d$ | Manufacturing tolerance | Admissible wear | $e_1$ | $e_2$ | $g$ | $s$ |
|---|---|---|---|---|---|---|---|---|
| CM16 | 16 | 15.70 | – 0.018 | + 0.018 | 8 | 17 | 18 | 8 |
| CM20 | 20 | 19.70 | – 0.022 | + 0.022 | 10 | 23 | 27 | 9 |
| CM25 | 25 | 24.60 | – 0.022 | + 0.022 | 10 | 23 | 27 | 9 |
| CM32 | 32 | 31.60 | – 0.025 | + 0.022 | 12 | 29 | 34 | 10 |

**Figure 5 — Gauges for checking permissible ovality of conduits**

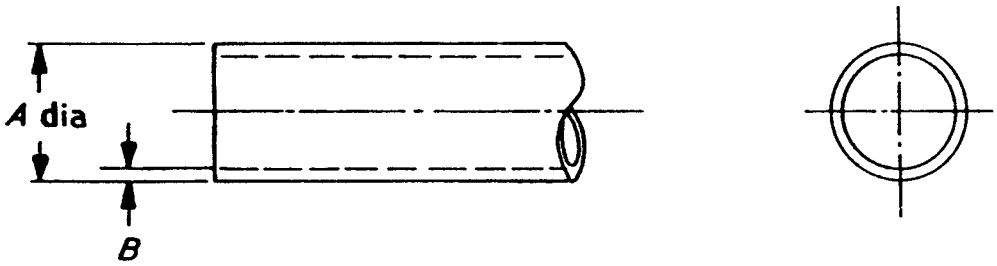



All dimensions are in millimetres.

| Nominal size of conduit | Bending radius | | Radius of groove $r$ |
|---|---|---|---|
| | Inside $R$ | Outside $R_1$ | |
| 16 | 96 | 113 | 8.1 |
| 20 | 120 | 141 | 10.2 |
| 25 | 150 | 178 | 12.9 |

**Figure 6 — Bending tool**

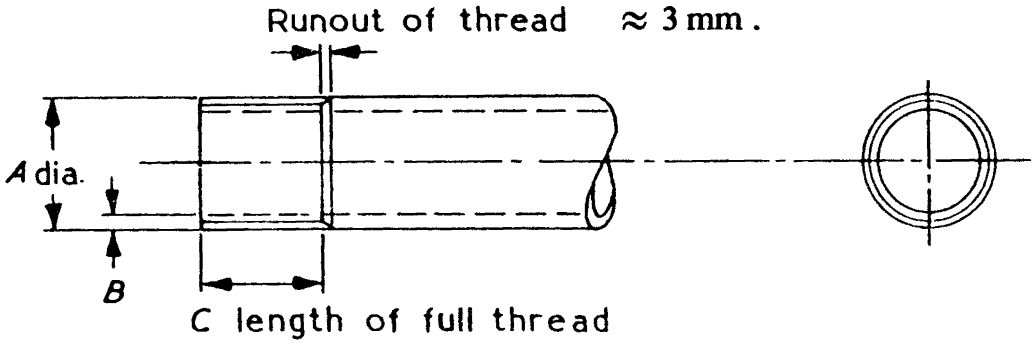
| Material<br>Steel | **Conduit, light gauge**<br>**(Plain)** | Standard<br>Sheet<br>1 |
|---|---|---|




| Nominal size | Dimensions (mm) | | | Weight (g/m) | | | |
|---|---|---|---|---|---|---|---|
| | *A* | | *B* | Class 1, 2 and 3 | | Class 4 | |
| | Min. | Max. | | Min. | Max. | Min. | Max. |
| 16 | 15.7 | 16.0 | 1.0 ± 0.10 | 324 | 405 | 355 | 470 |
| 20 | 19.7 | 20.0 | 1.0 ± 0.10 | 416 | 515 | 457 | 597 |
| 25 | 24.6 | 25.0 | 1.2 ± 0.15 | 598 | 784 | 649 | 887 |
| 32 | 31.6 | 32.0 | 1.2 ± 0.15 | 796 | 1 006 | 861 | 1 139 |

Preferred length of conduit 4.0 m. Minimum 3.0 m. Maximum 4.0 m.

| Material<br>Steel | **Conduit, heavy gauge**<br>**(Screwed or plain)** | Standard<br>Sheet<br>2 |
|---|---|---|

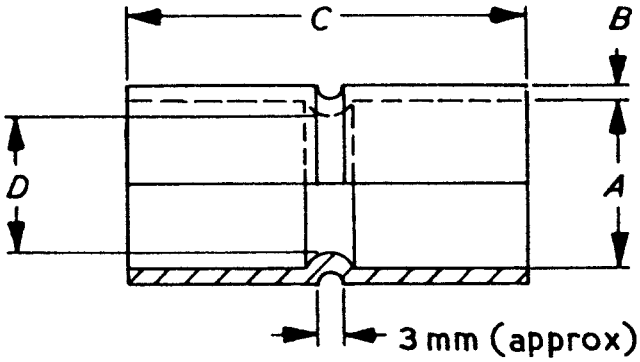



| Nominal size | Dimensions (mm) | | | | | Weights (g/m) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *A* | | *B* | *C* | | Class 1, 2 and 3 | | Class 4 | |
| | Min. | Max. | | Min. | Max. | Min. | Max. | Min. | Max. |
| 16 | 15.7 | 16.0 | 1.4 ± 0.10 | 11.5 | 13.5 | 452 | 531 | 483 | 594 |
| 20 | 19.7 | 20.0 | 1.6 ± 0.15 | 13.0 | 15.0 | 643 | 783 | 682 | 862 |
| 25 | 24.6 | 25.0 | 1.6 ± 0.15 | 16.0 | 18.0 | 811 | 995 | 860 | 1 095 |
| 32 | 31.6 | 32.0 | 1.6 ± 0.15 | 18.0 | 20.0 | 1 069 | 1 301 | 1 133 | 1 432 |

Preferred length of conduit 4.0 m. Minimum 3.0 m. Maximum 4.0 m.

NOTE Screw threads in accordance with Figure 1.

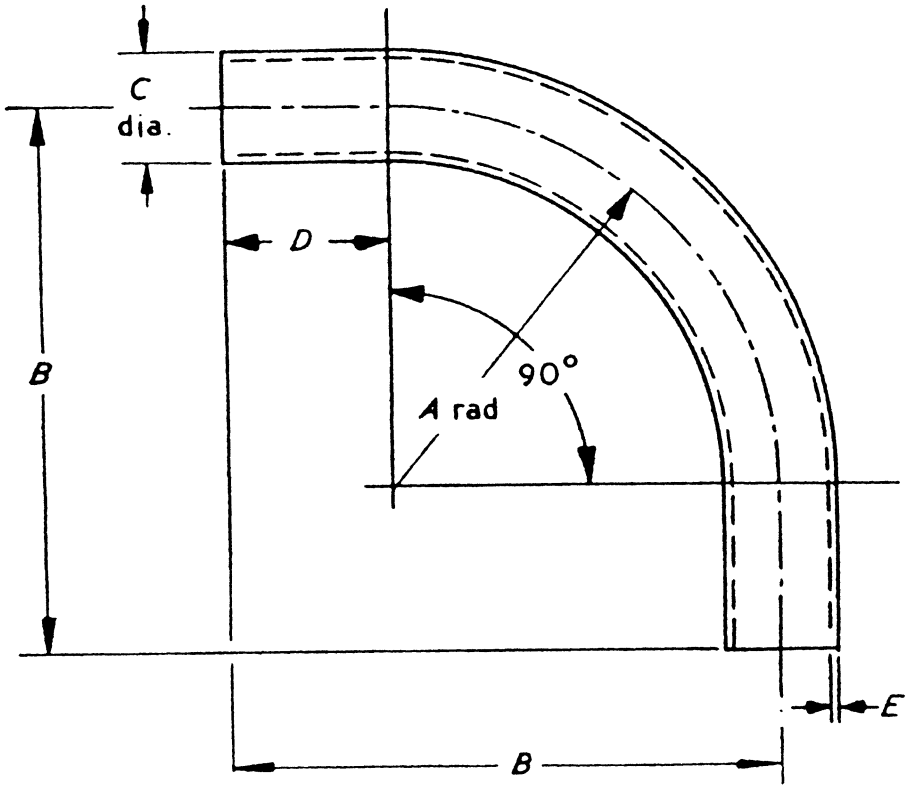
| Material<br>Steel | **Couplers**<br>**(Plain)** | Standard<br>Sheet<br>3 |
|---|---|---|




All dimensions are in millimetres.

| Nominal size | Inside diameter of collar *A* | | Minimum wall thickness *B* | Minimum overall length | | Inside diameter of ridge *D* | |
|---|---|---|---|---|---|---|---|
| | Min. | Max. | | Short couplers *C* | Long couplers *C* | Max. | Min. |
| 16 | 16.1 | 16.5 | 0.90 | 46 | 80 | 14.7 | 14.3 |
| 20 | 20.1 | 20.5 | 0.90 | 52 | 80 | 18.7 | 18.3 |
| 25 | 25.2 | 25.7 | 1.05 | 58 | 80 | 23.6 | 23.1 |
| 32 | 32.2 | 32.7 | 1.05 | 64 | 100 | 30.1 | 29.6 |

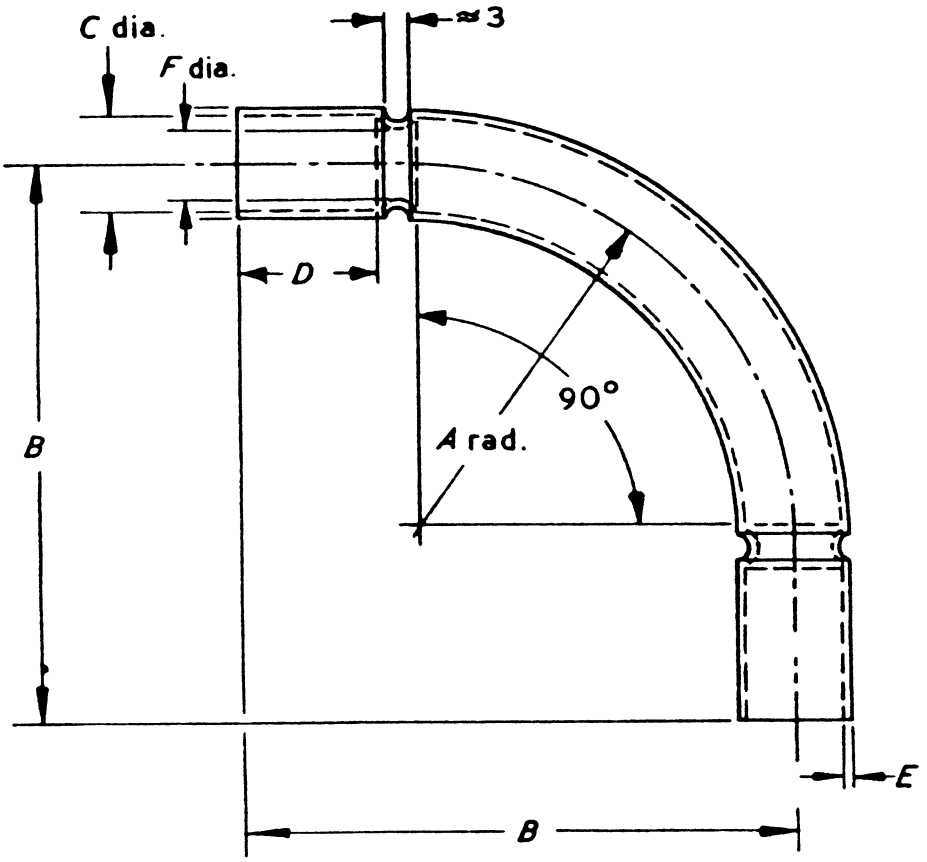
| Material<br>Steel | **Bends**<br>**(Plain)** | Standard<br>Sheet<br>4 |
|---|---|---|




All dimensions are in millimetres.

| Nominal size | *A* | *B* | Outside diameter *C* | | *D* | Wall thickness *E* |
|---|---|---|---|---|---|---|
| | min. | min. | max. | min. | min. | |
| 16 | 40.0 | 72.0 | 16.0 | 15.7 | 22.0 | 1.0 ± 0.10 |
| 20 | 50.0 | 90.0 | 20.0 | 19.7 | 25.0 | 1.0 ± 0.10 |
| 25 | 62.5 | 110.0 | 25.0 | 24.6 | 28.0 | 1.2 ± 0.15 |
| 32 | 80.0 | 144.0 | 32.0 | 31.6 | 31.0 | 1.2 ± 0.15 |

| Material<br>Steel | **Bends**<br>**(Internally plain)** | Standard<br>Sheet<br>5 |
|---|---|---|

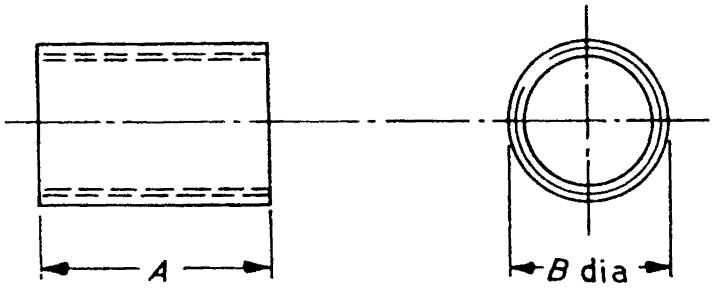



All dimensions are in millimetres.

| Nominal size | *A* min. | *B* min. | Inside diameter of collar *C* | | Min. length of collar *D* | | Wall thickness *E* | Inside diameter of ridge *F* | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Min. | Max. | Short | Long | min. | Max. | Min. |
| 16 | 40.0 | 72.0 | 16.1 | 16.5 | 22.0 | 40.0 | 0.9 | 14.7 | 14.3 |
| 20 | 50.0 | 90.0 | 20.1 | 20.5 | 25.0 | 40.0 | 0.9 | 18.7 | 18.3 |
| 25 | 62.5 | 110.0 | 25.2 | 25.7 | 28.0 | 40.0 | 1.05 | 23.6 | 23.1 |
| 32 | 80.0 | 144.0 | 32.2 | 32.7 | 31.0 | 50.0 | 1.05 | 30.1 | 29.6 |

| Material<br>Mall cast<br>iron or steel | **Couplers**<br>**(Internally screwed)** | Standard<br>Sheet<br>6 |
|---|---|---|

For tolerances see clause **6**
Screw threads to Figure 1.

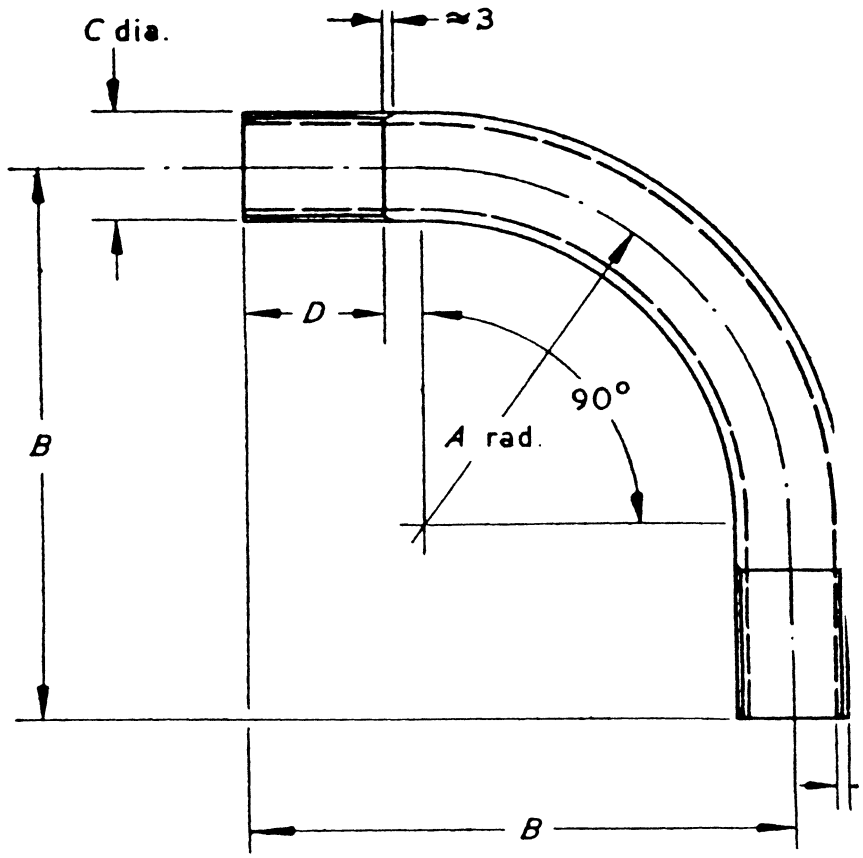



**Earthing Couplers.** These have an integral device for clamping an earthing conductor ranging from cross-sectional area of 1.5 $mm^2$ to 6 $mm^2$. The method of gripping shall be such that no adverse damage to the conductor will result.

All dimensions are in millimetres.

| **Metric dimensions** | | | |
|---|---|---|---|
| **Nominal size** | *A* **(minimum)** | *B* **(minimum)** | |
| | | **Mall.** | **Steel** |
| 16 | 30 | 19.2 | 17.5 |
| 20 | 33 | 23.2 | 21.5 |
| 25 | 39 | 28.4 | 26.7 |
| 32 | 43 | 35.6 | 33.8 |

| Material | Bends | Standard |
|---|---|---|
| Steel or | (Externally screwed) | Sheet |
| Mall Cast Iron | | 7 |




All dimensions are in millimetres.

| Nominal size | *A* min. | *B* min. | Outside diameter *C* | | Length of thread *D* | Wall thickness *E* |
|---|---|---|---|---|---|---|
| | | | Max. | Min. | | |
| 16 | 40.0 | 72.0 | 16.0 | 15.7 | 12.5 ± 1.0 | 1.4 ± 0.10 |
| 20 | 50.0 | 90.0 | 20.0 | 19.7 | 14.0 ± 1.0 | 1.6 ± 0.15 |
| 25 | 62.5 | 110.0 | 25.0 | 24.6 | 17.0 ± 1.0 | 1.6 ± 0.15 |
| 32 | 80.0 | 144.0 | 32.0 | 31.6 | 19.0 ± 1.0 | 1.6 ± 0.15 |

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