



भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG, NEW DELHI 110002
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हमारा संदर्भ : सीईडी 43/टी-106

20 अक्टूबर 2022

तकनीकी समिति : मृदा एवं नींव इंजीनियरी विषय समिति, सीईडी 43

प्राप्तकर्ता :

- 1 सिविल इंजीनियरी विभाग परिषद, सीईडीसी के सभी सदस्य
- 2 मृदा एवं नींव इंजीनियरी विषय समिति, सीईडी 43 के सभी सदस्य
- 3 रूचि रखने वाले अन्य निकाय।

महोदया/महोदय,

निम्नलिखित मसौदा संलग्न है:

प्रलेख संख्या	शीर्षक
सीईडी 43 (21048)WC	मृदा की पारगम्यता के निर्धारण के लिए सांचा असेंबली – विशिष्ट का भारतीय मानक मसौदा (IS 11209 का पहला पुनरीक्षण) (ICS No. 93.020; 13.080.20)

कृपया इस मसौदे का अवलोकन करें और अपनी सम्मतियाँ यह बताते हुए भेजे कि यह मसौदा प्रकाशित हो तो इस पर अमल करने में, आपको व्यवसाय अथवा कारोबार में क्या कठिनाइयाँ आ सकती हैं।

सम्मतियाँ भेजने की अंतिम तिथि: 20 नवंबर 2022

सम्मति यदि कोई हो तो कृपया अधोहस्ताक्षरी को ई मेल द्वारा madhurima@bis.gov.in पर या उपरलिखित पते पर, संलग्न फॉर्मेट में भेजें।

यदि कोई सम्मति प्राप्त नहीं होती है अथवा सम्मति में केवल भाषा संबंधी त्रुटि हुई तो उपरोक्त प्रलेख को यथावत अंतिम रूप दे दिया जाएगा। यदि सम्मति तकनीकी प्रकृति की हुई तो विषय समिति के अध्यक्ष के परामर्श से अथवा उनकी इच्छा पर आगे की कार्यवाही के लिए विषय समिति को भेजे जाने के बाद प्रलेख को अंतिम रूप दे दिया जाएगा।

यह प्रलेख भारतीय मानक ब्यूरो की वेबसाइट www.bis.gov.in पर भी उपलब्ध है।

धन्यवाद।

भवदीय

ह/-

(अरुण कुमार एस.)

वै. 'ई'/निर्देशक और प्रमुख (सिविल इंजीनियरी)

संलग्न: उपरलिखित



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**DRAFT IN
WIDE CIRCULATION**

DOCUMENT DESPATCH ADVICE

Reference	Date
CED 43/T-106	20 October 2022

TECHNICAL COMMITTEE:

SOIL AND FOUNDATION ENGINEERING SECTIONAL COMMITTEE, CED 43

ADDRESSED TO:

1. All Members of Civil Engineering Division Council, CEDC
2. All Members of Soil and Foundation Engineering Sectional Committee, CED 43
3. All other interests

Dear Madam/Sir,

Please find enclosed the following draft:

Doc. No.	Title
CED 43 (21048)WC	Draft Indian Standard Mould Assembly for Determination of Permeability of Soils — Specification (<i>First Revision of IS 11209</i>) (ICS No. 93.020; 13.080.20)

Kindly examine the draft and forward your views stating any difficulties which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

Last Date for comments: 20 November 2022

Comments if any, may please be made in the enclosed format and emailed at madhurima@bis.gov.in or sent at the above address.

In case no comments are received or comments received are of editorial nature, you will kindly permit us to presume your approval for the above document as finalized. However, in case comments, technical in nature are received, then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional Committee for further necessary action if so desired by the Chairman, Sectional Committee.

The document is also hosted on BIS website www.bis.gov.in.

Thanking you,

Yours faithfully,

Sd/-

(Arun Kumar S.)

Sc. 'E'/Director and Head (Civil Engg.)

Encl: As above

BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

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Draft Indian Standard

**MOULD ASSEMBLY FOR DETERMINATION OF
PERMEABILITY OF SOILS — SPECIFICATION**

(First Revision of IS 11209)

Soil and Foundation Engineering
Sectional Committee, CED 43

Last date of Comments:
20 November 2022

Soil and Foundation Engineering Sectional Committee, CED 43

FOREWORD

(Formal clauses to be added later)

There is a series of standards on methods of testing of soils. It has been recognized that reliable and inter-comparable test results can be obtained only with the standard testing equipment capable of giving that desired level of accuracy. With this objective, a series of specifications covering the requirements of equipment used for testing soils have been published to encourage their development and manufacture in the country.

The equipment covered in this standard is used for determination of coefficient of permeability of soils in accordance with IS 2720 (Part 17) : 1986 'Methods of test for soils: Part 17 Laboratory determination of permeability (*first revision*)'.

This standard was first published in 1985. The present revision has been taken up with a view to incorporating the modifications found necessary as a result of experience gained in the use of this standard. Also, in this revision, the standard has been brought into latest style and format of Indian Standards, and references to Indian Standards, wherever applicable have been updated. The other major modifications incorporated in this revision of the standard are given below:

- a) Requirements for washers and 'O'-ring have been included.
- b) The figure of permeability cell assembly has been modified to indicate placement of washer and O-ring.
- c) BIS certification marking clause has been modified to align with the revised *Bureau of Indian Standards Act, 2016*.

This standard contributes to the Sustainable Development Goal 9 - Industry, Innovation and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

BUREAU OF INDIAN STANDARDS

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Draft Indian Standard

**MOULD ASSEMBLY FOR DETERMINATION OF
PERMEABILITY OF SOILS — SPECIFICATION**

(First Revision of IS 11209)

Soil and Foundation Engineering
Sectional Committee, CED 43

Last date of Comments:
20 November 2022

1 SCOPE

This standard covers the details of mould, drainage base, drainage cap, extension collar, metal ring and rod used as the mould assembly for laboratory determination of the coefficient of permeability of soils.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated are valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
292 : 1983	Specification for leaded brass ingots and casting (<i>second revision</i>)
318 : 1981	Specification for leaded tin bronze ingots and casting (<i>second revision</i>)
2102 (Part 1) : 1993	General tolerances: Part 1 tolerances for linear and angular dimensions without individual tolerance indications (<i>third revision</i>)
4367 : 1991	Alloy steel forgings for general industrial use — Specification (<i>first revision</i>)
9975 (Part 1) : 1981	Specification for 'O' rings Dimensions
(Part 2) : 1984	Material selection and quality acceptance criteria

3 DIMENSIONS

Dimensions with tolerances of different component parts of the equipment shall be as given in Fig. 1 to 6. Except where tolerances are specially mentioned against the dimensions, all dimensions shall be taken as nominal and tolerances as given in IS 2102 (Part 1) of medium class shall apply.

4 MATERIALS

The materials for construction of the various component parts of the mould assembly shall be as given in Table 1.

Table 1 Materials for Construction of Different Equipment Parts
(Clause 4)

SI No.	Equipment	Material	Special Requirements	Relevant Indian Standard
(1)	(2)	(3)	(4)	(5)
i)	Mould	Brass/ Gun metal	-	IS 292 IS 318
ii)	Drainage base	Brass/ Gun metal	-	IS 292 IS 318
iii)	Drainage cap	Brass/ Gun metal	-	IS 292 IS 318
iv)	Metal ring	Brass/ Gun metal	-	IS 292 IS 318
v)	Tie rod and fly nut	Mild steel	Nickel/chrome plated	IS 4367
vi)	Extension collar	Brass/ Gun metal	-	IS 292 IS 318
vii)	Washer	Gasket rubber vulcanized		Vulcanized rubber
viii)	'O'-ring	Synthetic rubber		IS 9975 (Parts 1 and 2)

5 CONSTRUCTION

The mould, drainage base and cap, metal ring, tie rod, extension collar shall be constructed as per details given in Fig. 1 to 7. The complete assembly shall be leak proof and tested for an internal hydraulic pressure of 100 kPa.

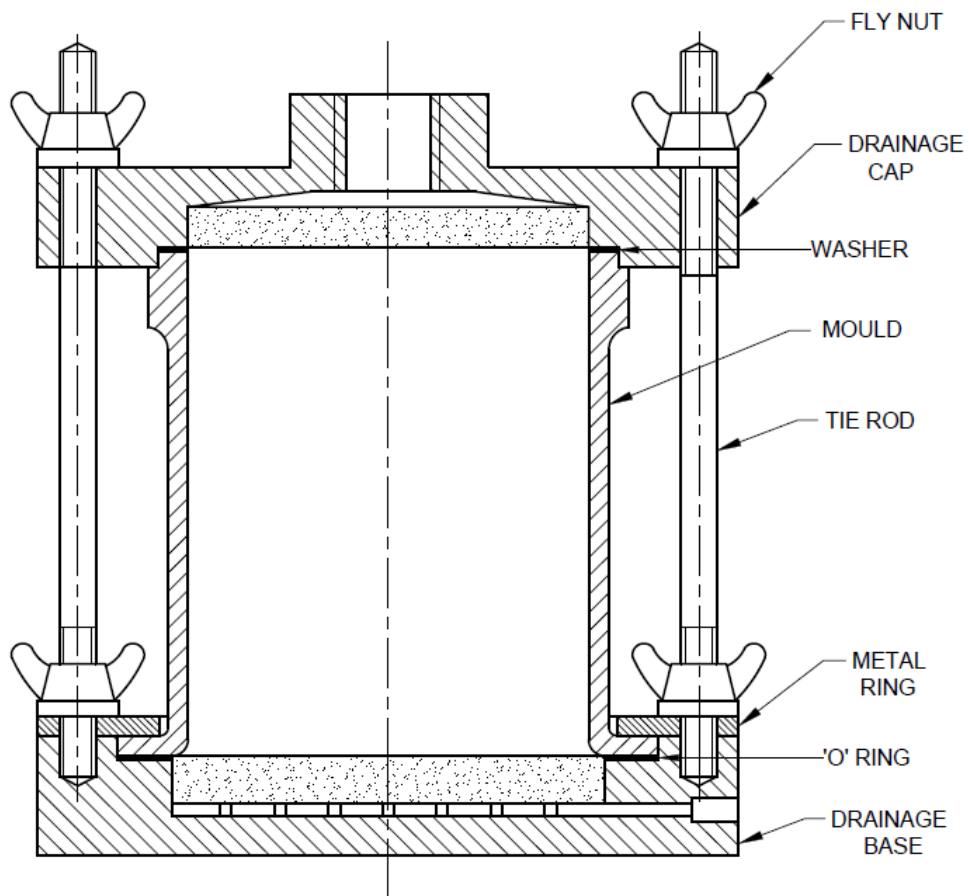
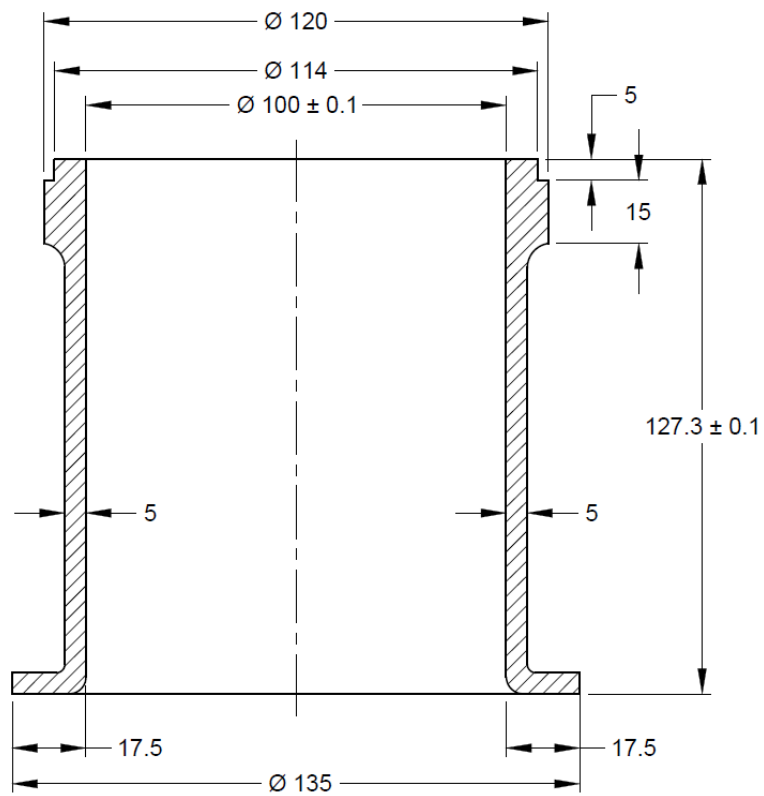
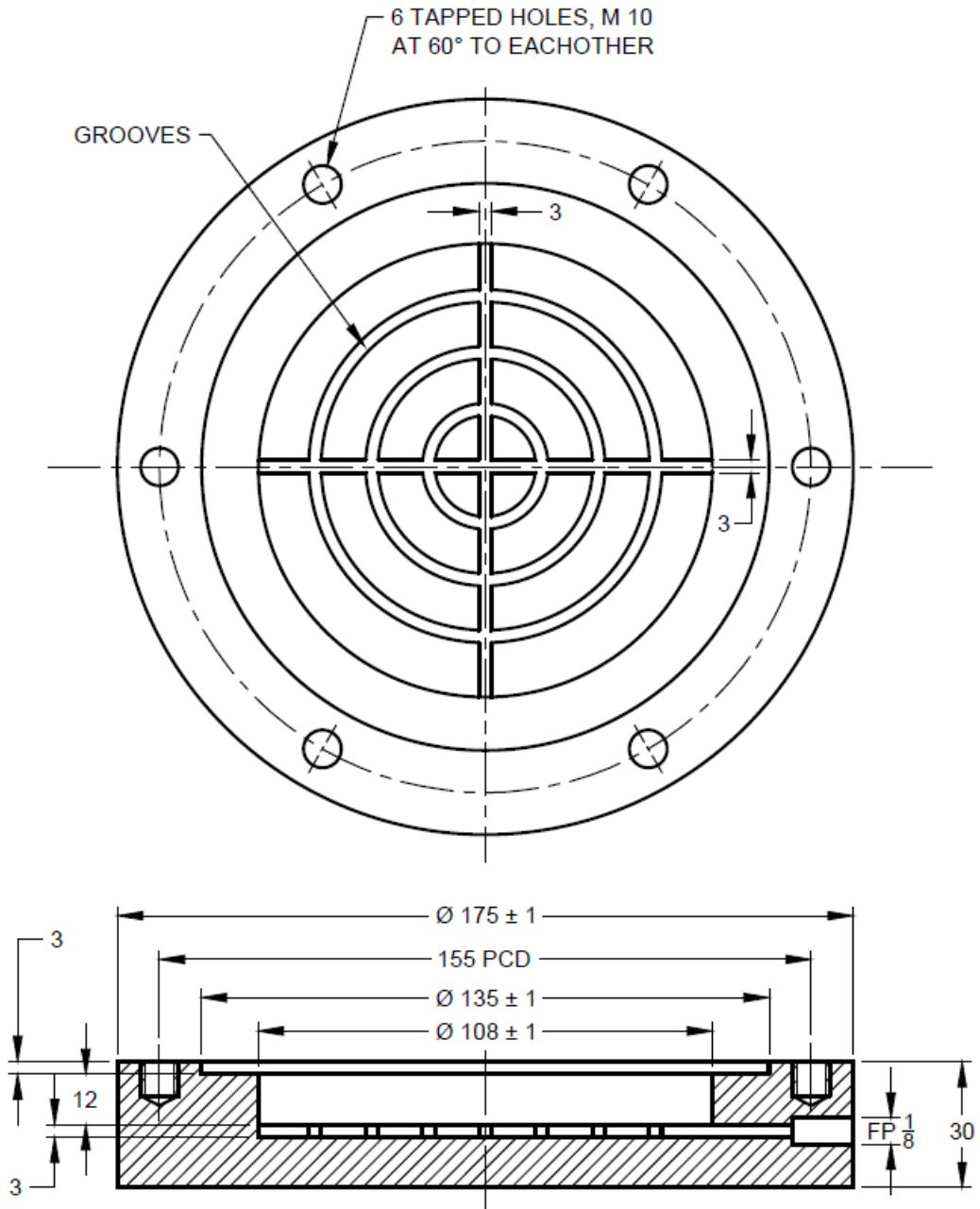


FIG. 1 PERMEABILITY CELL ASSEMBLY



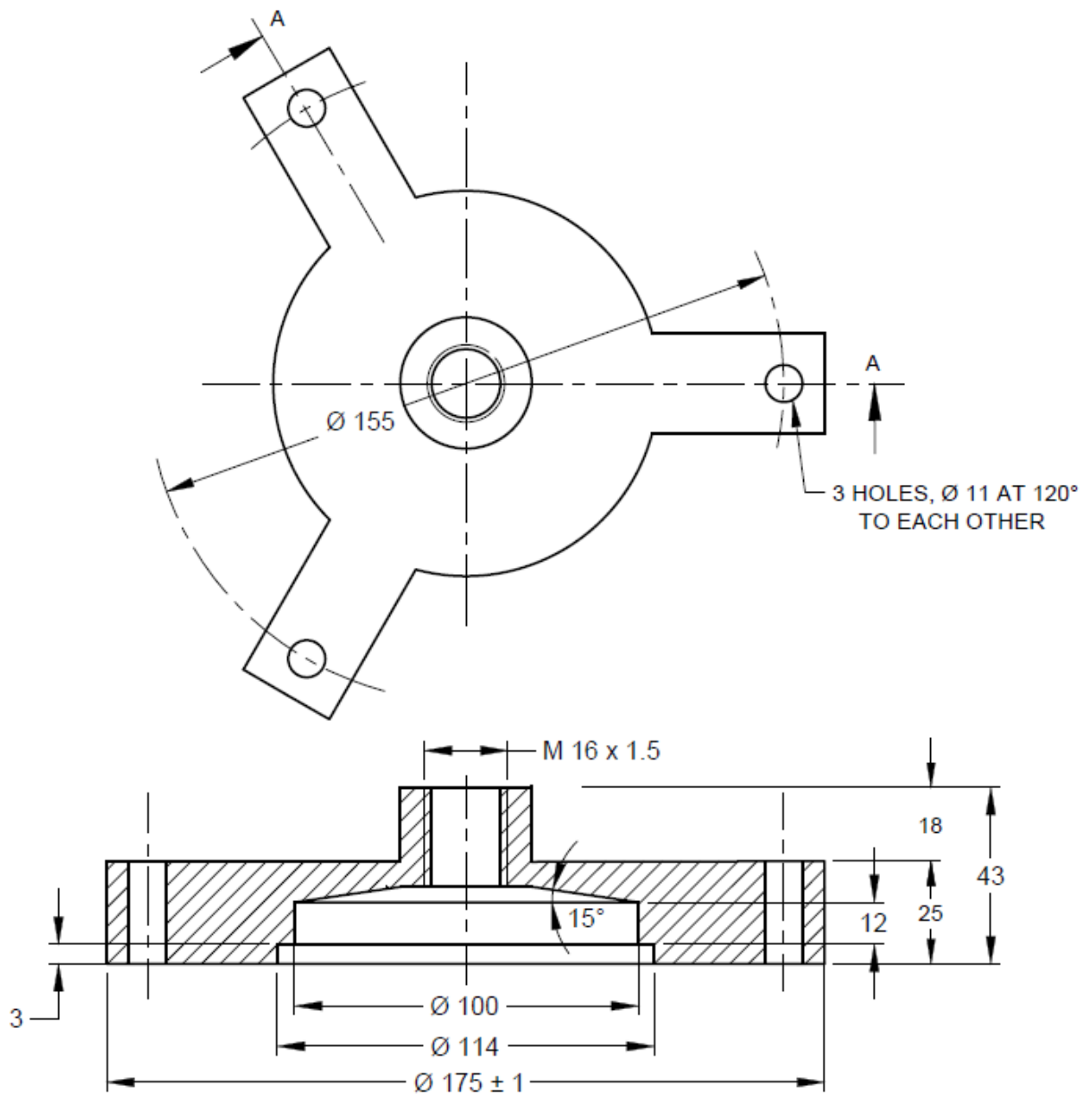
All dimensions in millimetres.

FIG. 2 MOULD



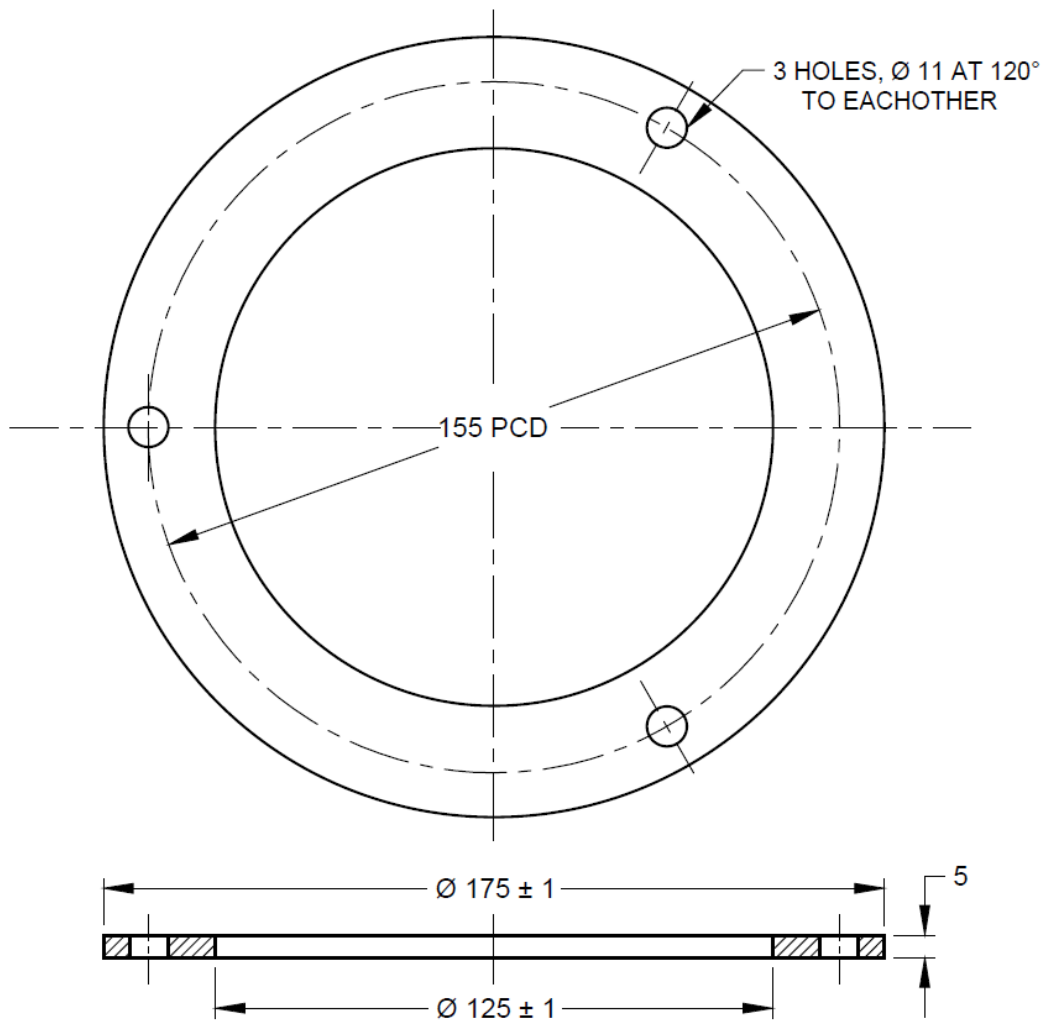
All dimensions in millimetres.

FIG. 3 DRAINAGE BASE



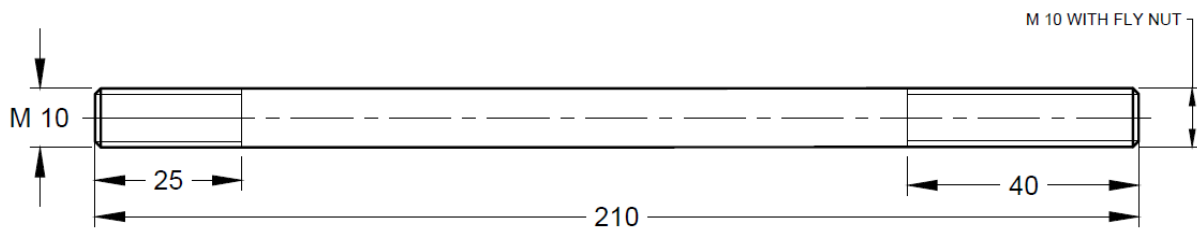
All dimensions in millimetres.

FIG. 4 DRAINAGE CAP



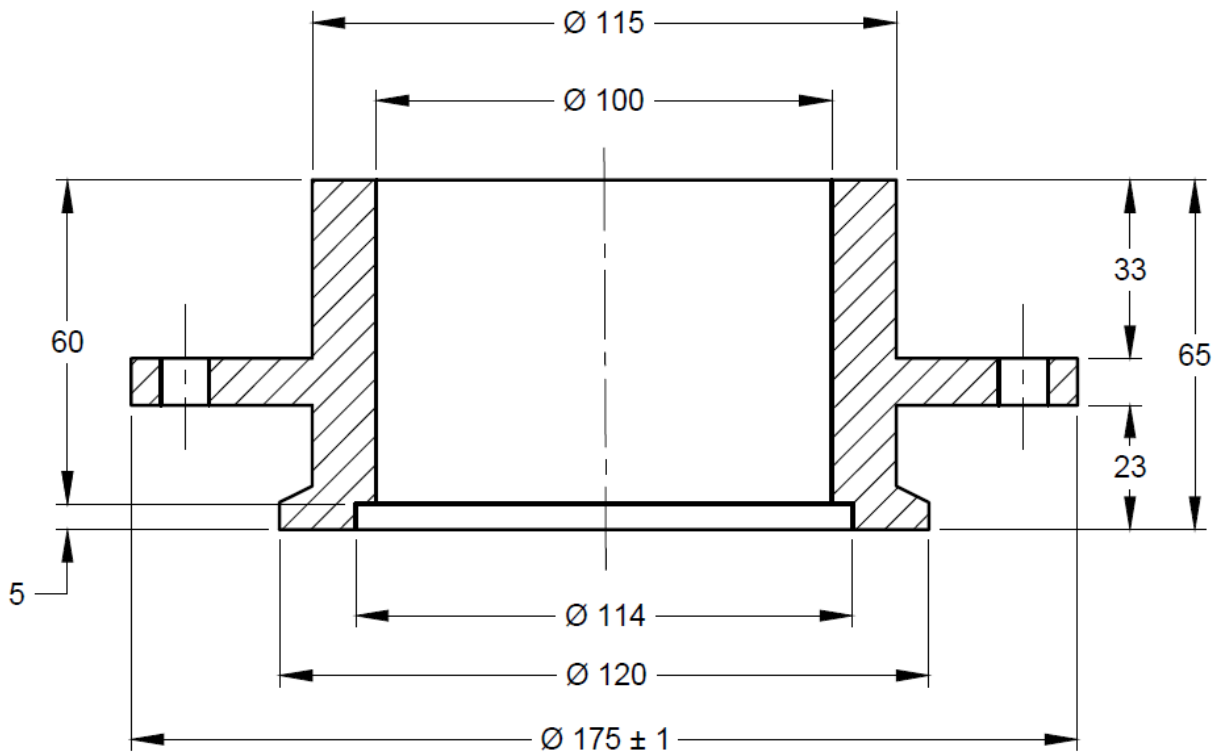
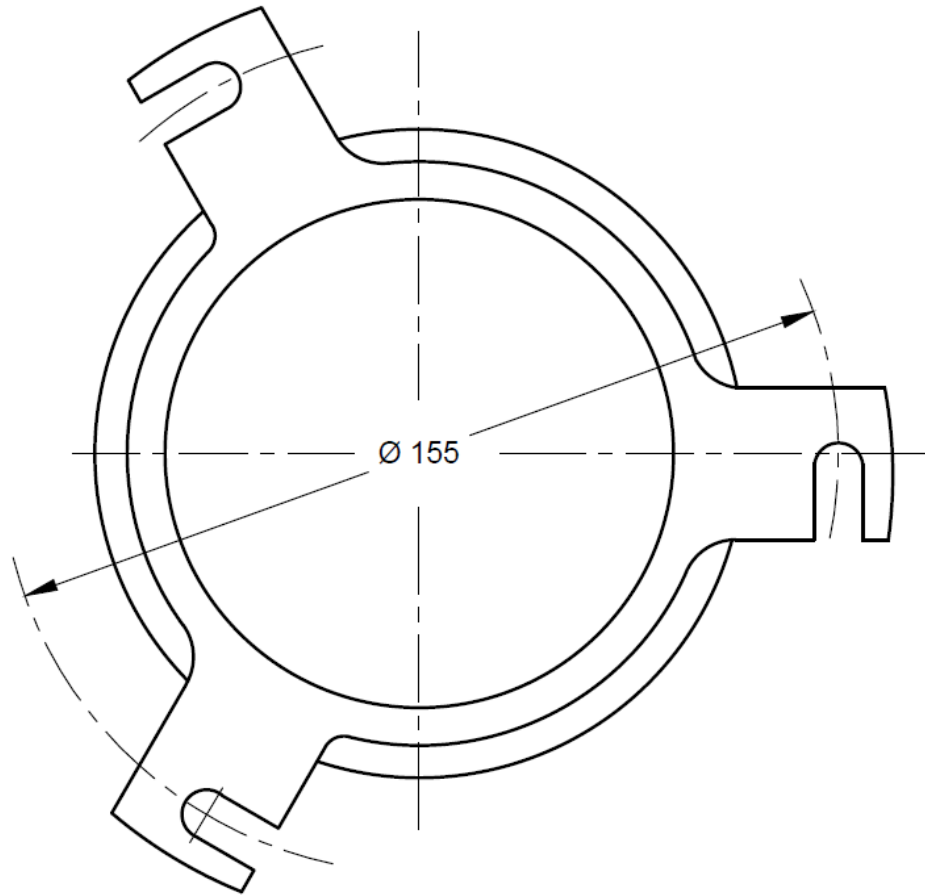
All dimensions in millimetres.

FIG. 5 METAL RING



All dimensions in millimetres.

FIG. 6 TIE ROD



All dimensions in millimetres.

FIG. 7 EXTENSION COLLAR

6 MARKING

6.1 The following information shall be clearly and indelibly marked on each equipment:

- a) Name of the manufacturer or his registered trade-mark or both;
- b) Type of material; and
- c) Date of manufacture.

6.2 BIS Certification Marking

The product conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product may be marked with the Standard Mark.