भारतीय मानक **IS 9669 : 2024**

Indian Standard

सीबीआर सांचा और उसके सहायक उपकरण — विशिष्टि

(पहला पुनरीक्षण)

CBR Mould and its Accessories — Specification

(First Revision)

ICS 13.080.20; 93.020

भारतीय मानक ब्यूरो
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December 2024 **Price Group 7**

Soil and Foundation Engineering Sectional Committee, CED 43

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Soil and Foundation Engineering Sectional Committee had been approved by the Civil Engineering Division Council.

There are 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 the 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 manufacturing in the country.

The equipment covered in this standard is used for determination of California bearing ratio (CBR) value covered in IS 2720 (Part 16) : 1987 ‘Methods of test for soil: Part 16 Laboratory determination of CBR (*second revision*)’.

This standard was first published in 1980. The present revision has been taken up with a view to incorporate 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. 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.

The composition of the Committee responsible for the formulation of this standard is given in Annex B.

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.

Indian Standard

CBR MOULD AND ITS ACCESSORIES — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers the requirements for mould, cutting collar, base plate, spacer disc, weights, penetration plunger and other accessories used for the determination of California bearing ratio (CBR) value.

2 REFERENCES

The standards listed in Annex A contain provisions, which through references in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

3 DIMENSIONS

Dimensions with tolerances of different components of CBR mould and its accessories shall be as detailed in Fig. 1 to Fig. 10. Except where tolerances are specifically mentioned against the dimensions, all dimensions shall be taken as nominal, and tolerances thereon shall be as given for medium class in IS 2102 (Part 1).

4 MATERIALS

The materials for construction of the various components of CBR mould and its accessories shall be as given in Table 1.

Table 1 Materials for Construction of Different Components of CBR Mould and its Accessories

(*Clause* 4)

Sl No.	Equipment	Material	Special Requirement, if any	Conforming to Indian Standard
(1)	(2)	(3)	(4)	(5)
i)	Mould (*see* Fig. 1)	Copper alloy, or brass, or phosphor bronze, or	–	IS 318
ii)	Cutting collar (*see* Fig. 2)		–	IS 292
iii)	Base plate (*see* Fig. 3)		–	IS 28
		Mild steel	Chrome-plated	IS 513 (Part 1)
iv)	Spacer disc and handle (*see* Fig. 4)	Mild steel	–	IS 513 (Part 1)
v)	Weights (*see* Fig. 5)	Cast iron	–	IS 210
vi)	Adjustable stem with perforated plate (*see* Fig. 6)	Brass	–	IS 410
vii)	Penetration plunger (*see* Fig. 7)	Mild steel	Plated	IS 513 (Part 1)
viii)	Stay rod (*see* Fig. 8)	Mild steel	–	IS 513 (Part 1)
ix)	Wing nut and washer (*see* Fig. 9)	Forged steel or cast steel	Cadmium/ chrome-plated	–
x)	Tripod (*see* **5.4**)	Copper alloy	–	IS 318

5 CONSTRUCTION

5.1 Mould

The mould shall be smooth from inside and shall have two ears either cast integral with the body or welded. It shall have suitable seatings at the ends for positioning the collar and the base plate (*see* Fig. 1)

5.2 Collar

The collar shall be made from the same material as that of mould. Two similar ears, as in the case of the mould, shall be cast integral with the body or welded. It shall have suitable seatings at the lower end for sitting flush with the mould (*see* Fig. 2).

5.3 Base Plate

A suitable seating of about 2 mm deep shall be provided on the top face for proper seating of the mould (*see* Fig. 3), and shall be of the same material as that of the mould.

5.4 The details of other accessories, namely, spacer disc, weights, adjustable stem with perforated plates, penetration plunger, stay rod and wing nut, are given from Fig. 4 to Fig. 9. The details of tripod are given in Fig. 10.

6 MARKING

6.1 The following information shall be clearly and indelibly marked on each CBR mould and its accessories:

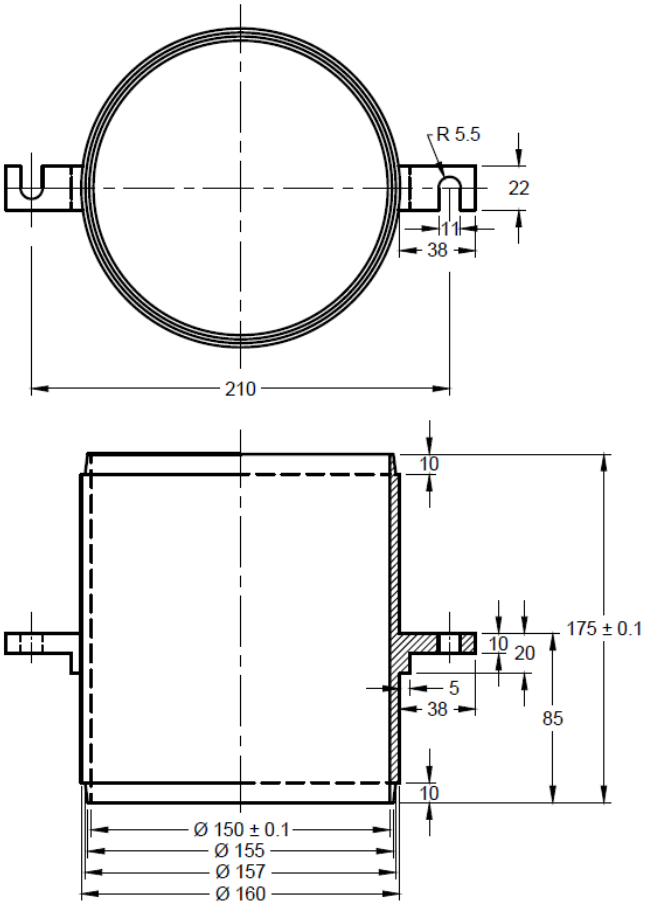
a) Name of manufacturer or his registered trade-mark or both;

b) Type of material used; and

c) Date of manufacture.

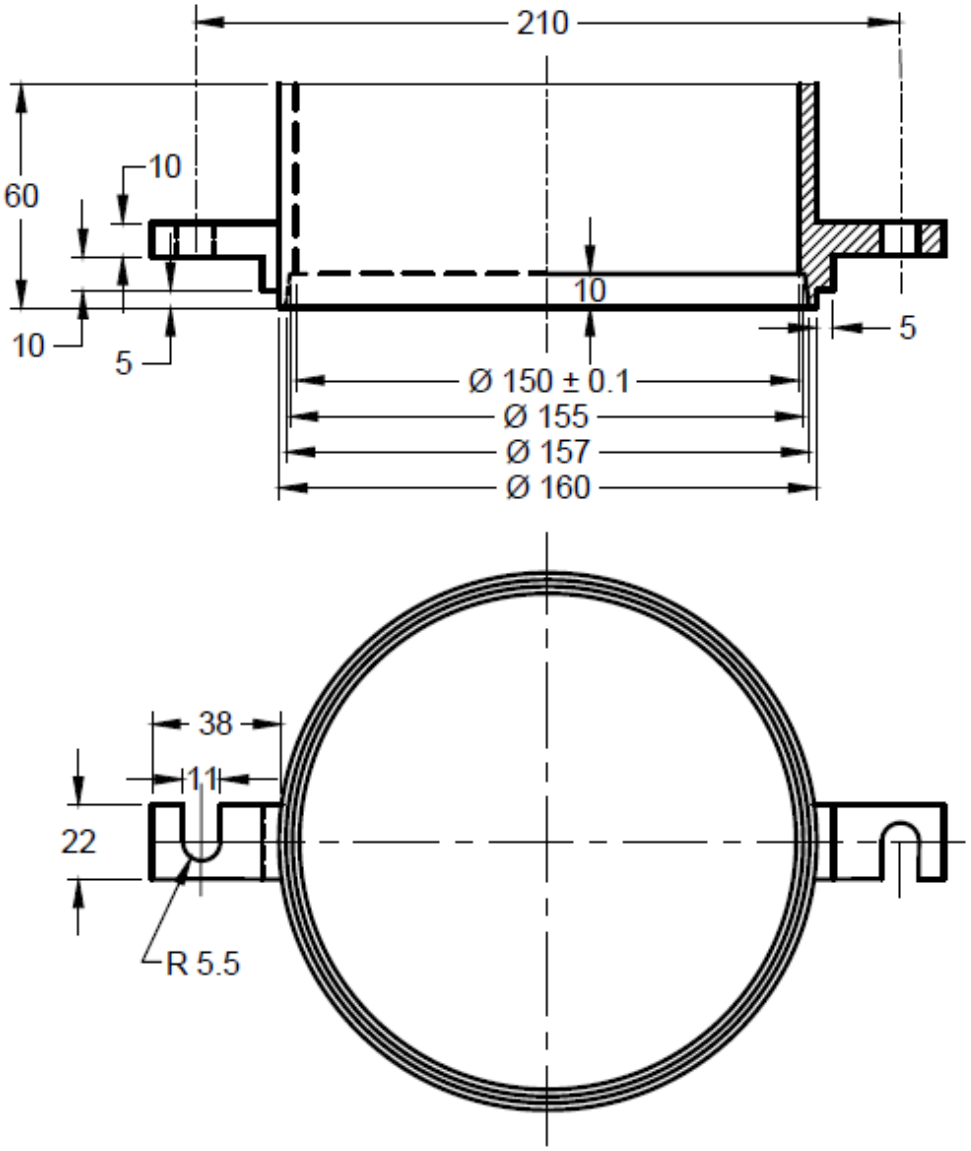
6.2 BIS Certification Marking

The product(s) 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 products may be marked with the Standard Mark.



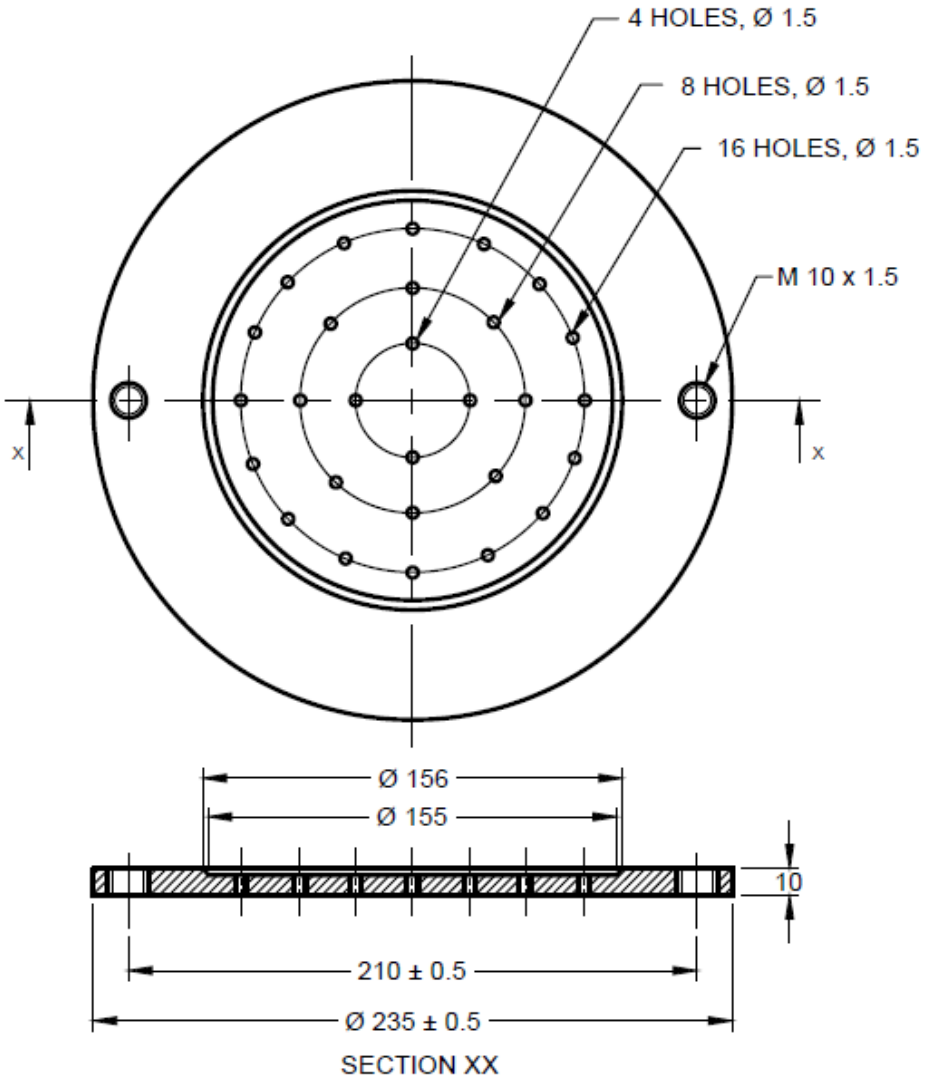
All dimensions in millimetres.

FIG. 1 MOULD



All dimensions in millimetres.

FIG. 2 CUTTING COLLAR



All dimensions in millimetres.

FIG. 3 BASE PLATE

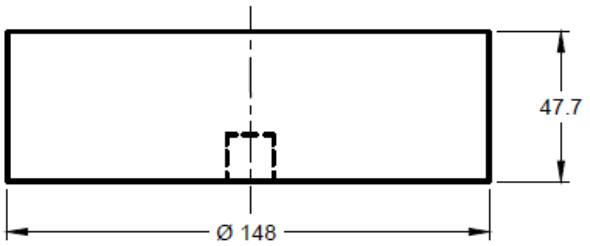


FIG. 4A SPACER DISC

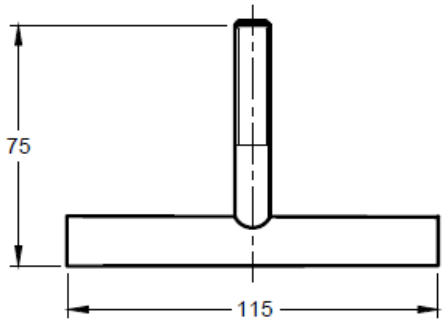


FIG. 4B HANDLE FOR SPACER DISC

All dimensions in millimetres.

FIG. 4 SPACER DISC AND HANDLE

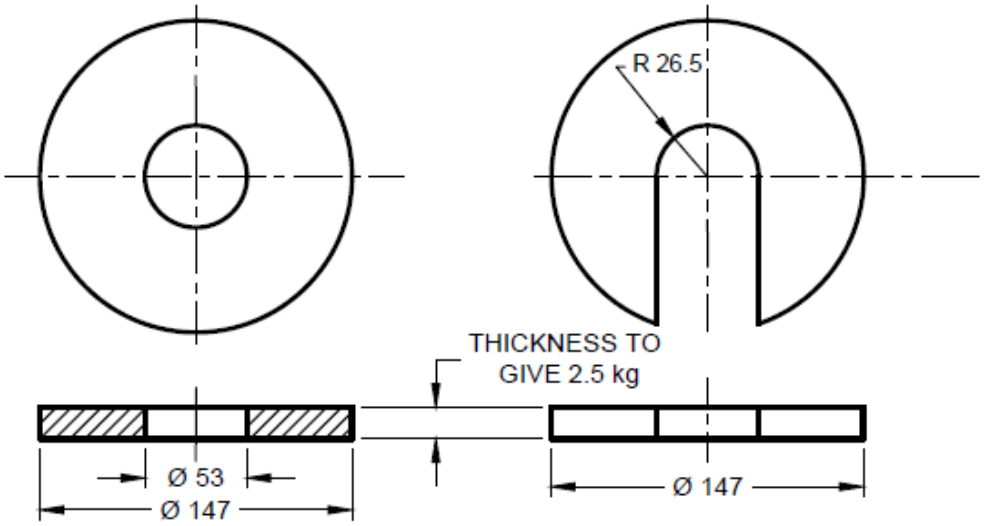
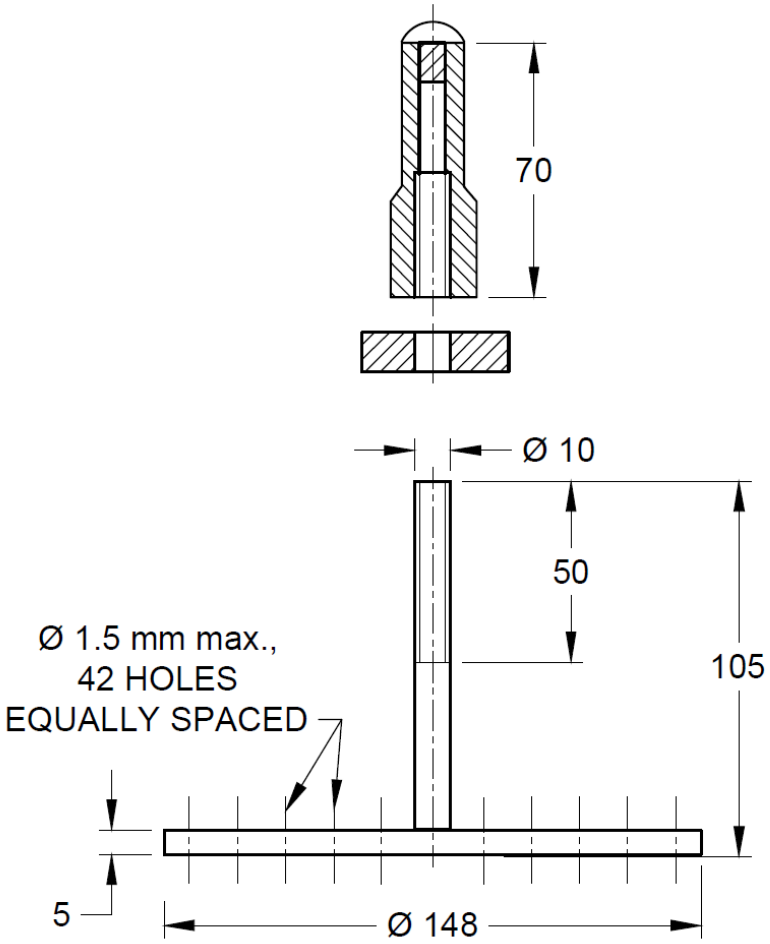


FIG. 5A ANNULAR WEIGHT FIG. 5B SLOTTED WEIGHT

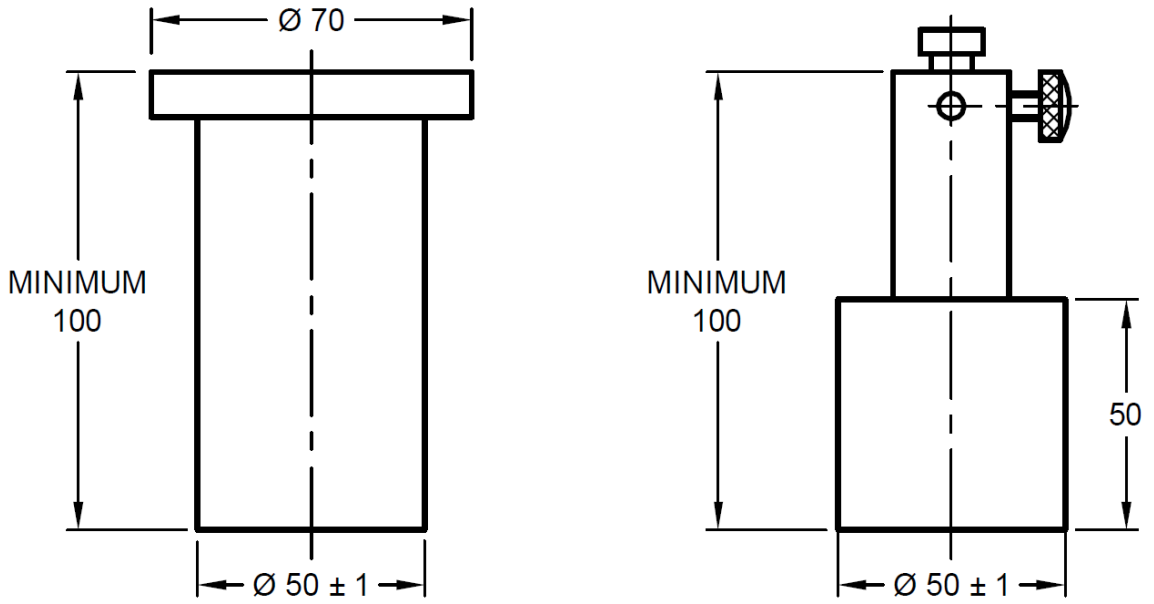
All dimensions in millimetres.

FIG. 5 METAL WEIGHTS



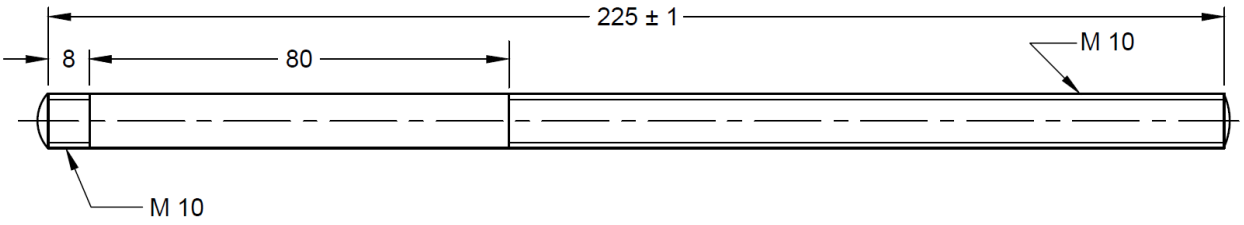
All dimensions in millimetres.

FIG. 6 ADJUSTABLE STEM AND PERFORATED PLATES



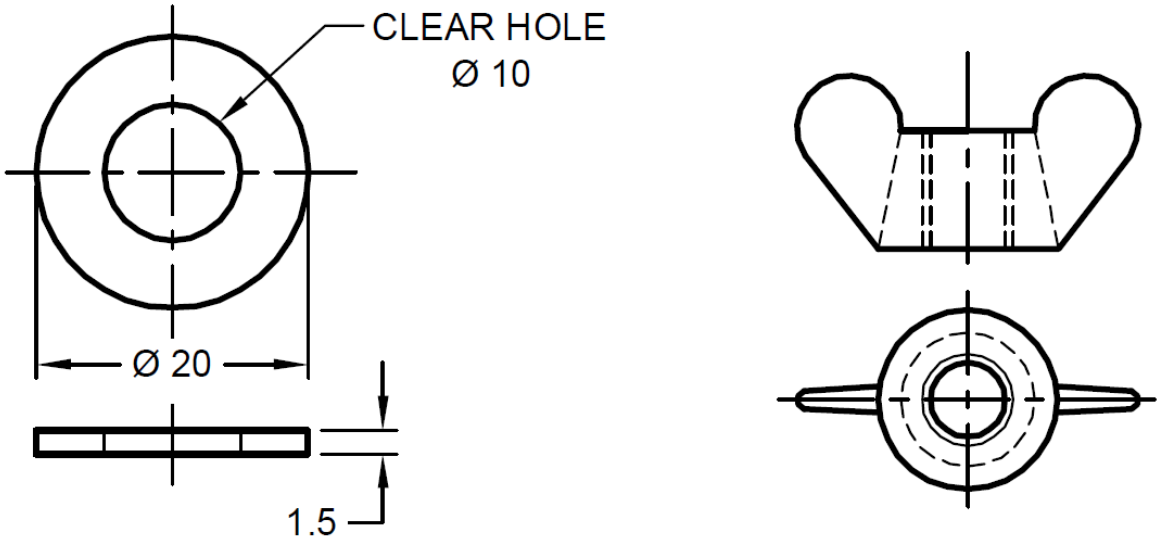
All dimensions in millimetres.

FIG. 7 PENETRATION PLUNGER



All dimensions in millimetres.

FIG. 8 STAY ROD

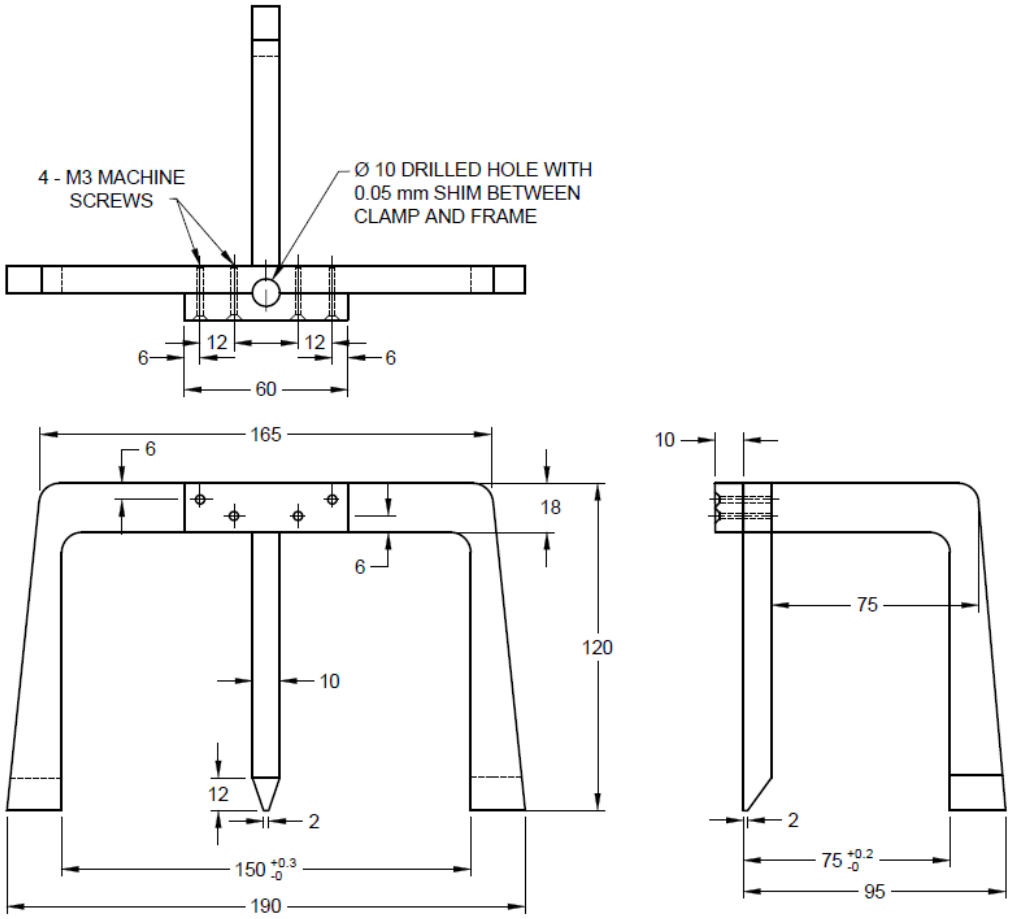


STEEL WASHER

WING NUT

All dimensions in millimetres.

FIG. 9 WING NUT AND WASHER



All dimensions in millimetres.

FIG. 10 METAL TRIPOD

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 28 : 1985	Specification for phosphor bronze ingots and castings (*fourth revision*)
IS 210 : 2009	Grey iron castings — Specification (*fifth revision*)
IS 292 : 1983	Specification for leaded brass ingots and casting (*second revision*)
IS 318 : 1981	Specification for leaded tin bronze ingots and castings (*second revision*)
IS 410 : 1977	Specification for cold rolled brass sheet, strip and foil (*third revision*)
IS 513 (Part 1) : 2016	Cold reduced carbon steel sheet and strip: Part 1 Cold forming and drawing purpose (*sixth revision*)
IS 2102 (Part 1) : 1993	General tolerances: Part 1 Tolerances for linear and angular dimensions without individual tolerance indications (*third revision*)

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Soil and Foundation Engineering Sectional Committee, CED 43

Organization	*Representative(s)*
In Personal Capacity (*473, Vinayak Apartments, BHEL Housing Society, Plot No. C-58/19, Sector 62, Noida - 201301*)	SHRI C. PUSHPAKARAN **(*Chairperson*)**
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National High Speed Rail Corporation Ltd, Mumbai	REPRESENTATIVE

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In Personal Capacity (*1-B, Villakkupattam Palace, First Floor, 48, New Avadi Road, Kilpauk, Chennai - 600010*)	DR V. BALAKUMAR
BIS Directorate General	SHRI DWAIPAYAN BHADRA, SCIENTIST 'E'/DIRECTOR AND HEAD (CIVIL ENGINEERING) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI DHEERAJ DAMACHYA
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Bureau of Indian Standards

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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