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Indian Standard

SPECIFICATION FOR
CBR MOULDS AND ITS ACCESSORIES

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Indian Standard

SPECIFICATION FOR CBR MOULDS AND ITS ACCESSORIES

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Indian Standard

SPECIFICATION FOR CBR MOULDS AND ITS ACCESSORIES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 10 November 1980, after the draft finalized by the Soil Engineering and Rock Mechanics Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 A series of standards on methods of testing of soils has been published by the Institution. It has been recognized that reliable and inter-capability test results can be obtained only with the standard testing equipment capable of giving that desired level of accuracy. The Sectional Committee has, therefore, decided to bring out a series of specifications covering the requirements of equipment used for testing soils to encourage its development and manufacture in the country. The equipment covered in this standard is used for determination of CBR value covered in IS : 2720 (Part XVI)-1979*.

0.3 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 : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the details of mould, cutting collar, base plate, spacer disc, weights, penetration plunger and other accessories used for the determination of CBR value.

2. DIMENSIONS

2.1 Dimensions with tolerance of different equipment shall be as detailed in Fig. 1 to 9. Except where tolerances are specifically mentioned against

*Methods of test for soils: Part XVI Laboratory determination of CBR (*first revision*).

†Rules for rounding off numerical values (*revised*).

the dimensions, all dimensions shall be taken as nominal dimensions and tolerances as given in IS : 2102-1969*.

3. MATERIALS

3.1 The materials for construction of the various equipment shall be as given in Table 1.

TABLE 1 MATERIALS FOR CONSTRUCTION OF DIFFERENT EQUIPMENTS

SL No.	EQUIPMENT	MATERIAL	SPECIAL REQUIREMENTS, IF ANY	RELEVANT INDIAN STANDARD
(1)	(2)	(3)	(4)	(5)
1.	a) Mould (see Fig. 1)	a) Copper alloy	—	IS : 318-1962*
	b) Cutting collar (see Fig. 2)	b) Brass	—	IS : 292-1961†
	c) Base plate (see Fig. 3)	c) Phosphor bronze	—	IS : 28-1975‡
		d) Mild steel	Chrome-plated	IS : 513-1973§
2.	Spacer disc and handle (see Fig. 4)	Mild steel	—	IS : 513-1973§
3.	Weights (see Fig. 5)	Cast iron	—	IS : 210-1978
4.	Adjustable stem with perforated plate (see Fig. 6)	Brass	—	IS : 410-1977¶
5.	Penetration plunger (see Fig. 7)	Mild steel	Plated	IS : 513-1973§
6.	Stay rod (see Fig. 8)	Mild steel	—	IS : 513-1973§
7.	Wing nut and washer (see Fig. 9)	Forged steel or Cast steel	Cadmium/ chrome-plated	—

*Specification for leaded tin bronze ingots and castings (revised).

†Specification for brass ingots and castings (revised).

‡Specification for phosphor bronze ingots and castings (third revision).

§Specification for cold rolled carbon steel sheets (second revision).

||Specification for grey iron castings (third revision).

¶Specification for rolled brass sheet, strip and foil (third revision).

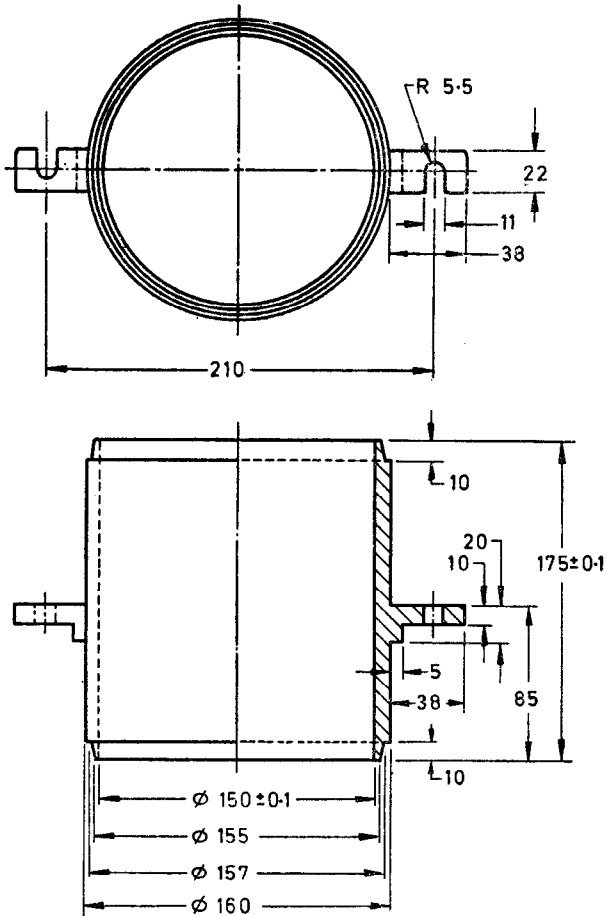
4. CONSTRUCTION

4.1 **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

*Specification for allowable deviations for dimensions without specified tolerances (first revision).

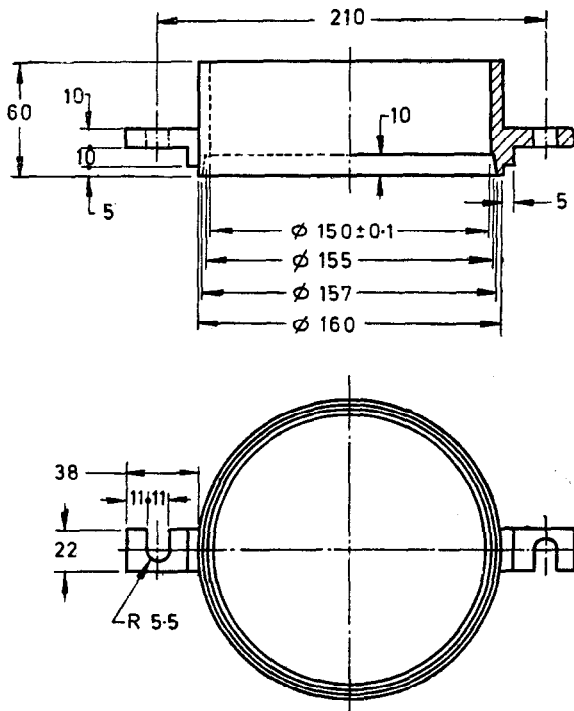
seatings at the ends for positioning the collar and the base plate (see Fig. 1).

4.2 Collar — The collar shall be made from 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).



All dimensions in millimetres.

FIG. 1 MOULD

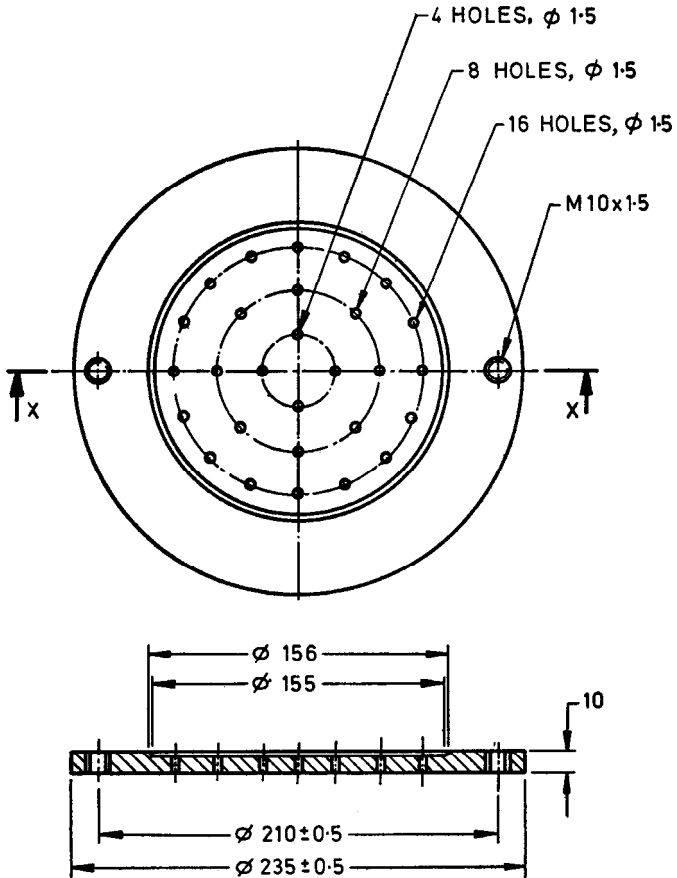


All dimensions in millimetres.

FIG. 2 CUTTING COLLAR

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

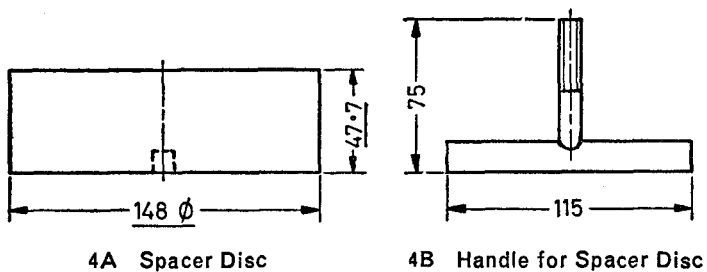
4.4 The details of other accessories, namely, spacer disc, weights, adjustable stem with perforated plates, penetration plunger, stay rod and wing nut, are given from Fig. 4 to 9.



SECTION XX

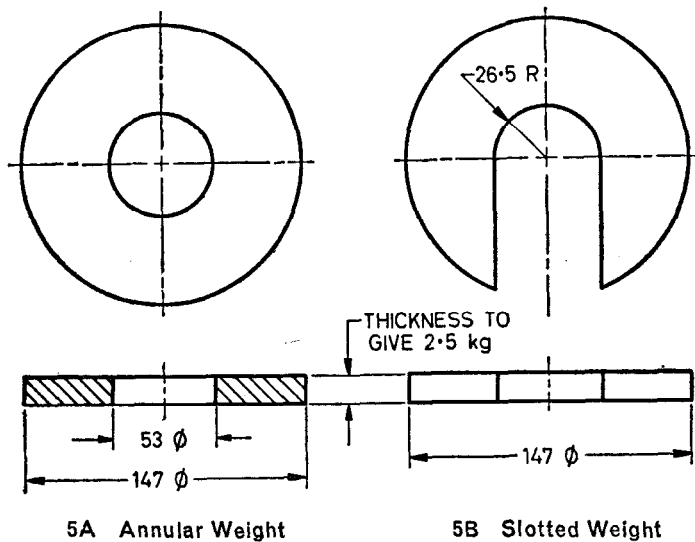
All dimensions in millimetres.

FIG. 3 BASE PLATE



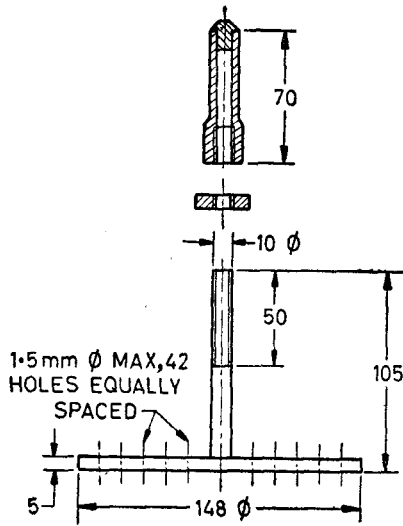
All dimensions in millimetres.

FIG. 4 SPACER DISC AND HANDLE



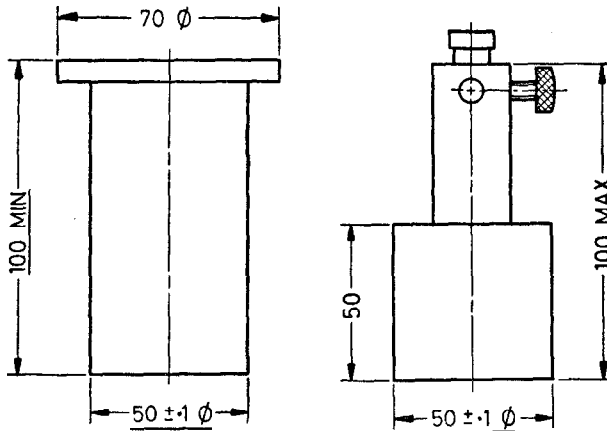
All dimensions in millimetres.

FIG. 5 METAL WEIGHTS



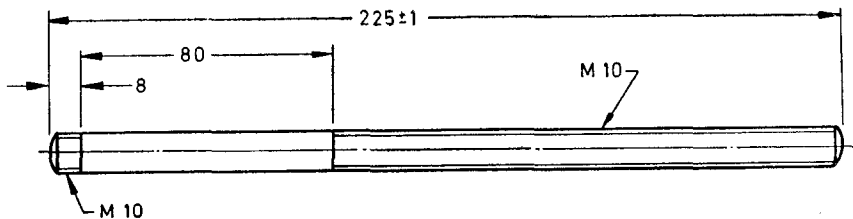
All dimensions in millimetres.

FIG. 6 ADJUSTABLE STEM AND PERFORATED PLATES



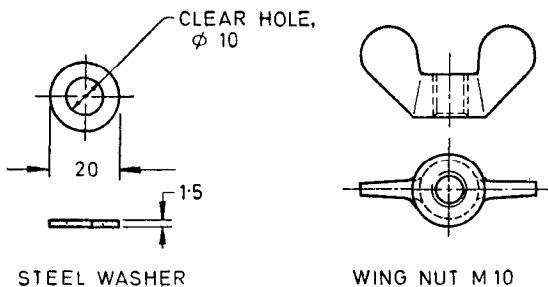
All dimensions in millimetres.

FIG. 7 PENETRATION PLUNGER



All dimensions in millimetres.

FIG. 8 STAY ROD



All dimensions in millimetres.

FIG. 9 WING NUT AND WASHER

5. MARKING

5.1 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 used, and
- c) Date of manufacture.

5.1.1 The equipment may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

(Continued from page 2)

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INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>	<i>Definition</i>
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²



AMENDMENT NO. 1 MARCH 1983

TO

IS : 9669-1980 SPECIFICATION FOR
CBR MOULDS AND ITS ACCESSORIES

Addenda

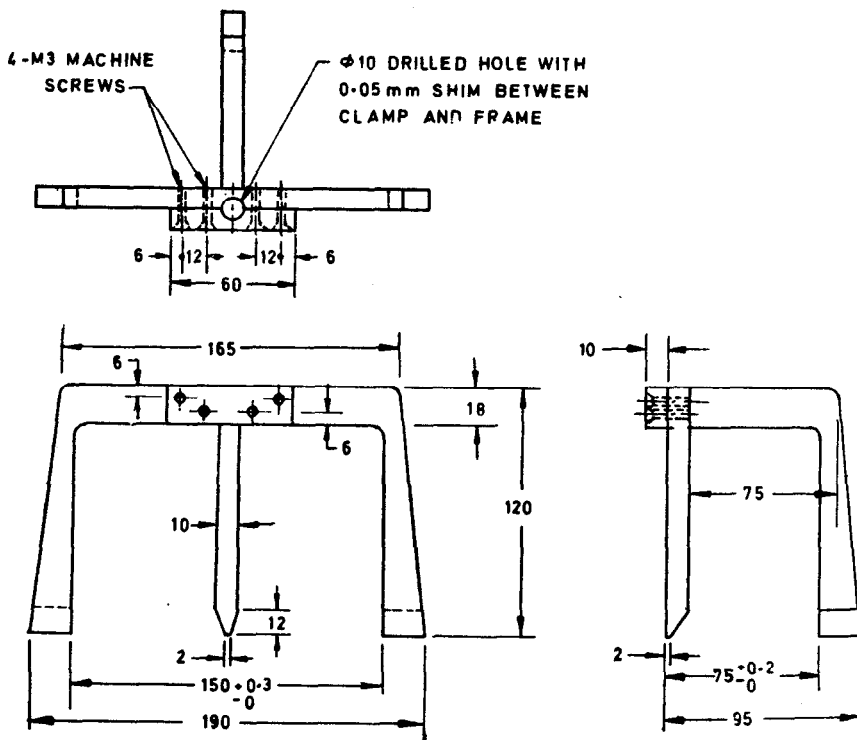
(Page 4, Table 1, Sl No. 7) — Add the following new matter under respective columns after Sl No. 7:

(1)	(2)	(3)	(4)	(5)
8.	Tripod (see 4.4)	Copper alloy	—	IS : 318-1962*

(Page 6, clause 4.4) — Add the following new matter at the end of the clause:

‘ The details of tripod are given in Fig. 10. ’

(Page 10, Fig. 9) — Add the following new figure after Fig. 9:



All dimensions in millimetres.

FIG. 10 METAL TRIPOD

(BDC 23)



AMENDMENT NO. 2 SEPTEMBER 1984

TO

IS:9669-1980 SPECIFICATION FOR CBR MOULDS
AND ITS ACCESSORIES

Corrigenda

(Page 4, clause 2.1) - Substitute 'for medium class in IS:2102(Part 1)-1980*,' for 'in IS:2102-1969*.'

[Page 4, Table 1, Sl No.(1)(a) and (8) read with Amendment No, 1] - Substitute 'IS:318-1981*' for 'IS:318-1962*'.
'

(Page 4, Table 1, foot-note with '*' mark) - Substitute the following for the existing foot-note:

'*Specification for leaded tin bronze ingots and castings (*second revision*).'

(Page 6, Fig. 2) - Delete the first dimension '11' of the ear.

(HDC 23)