IS : 11209 - 1985
(Reaffirmed 1995)

Indian Standard

SPECIFICATION FOR MOULD ASSEMBLY FOR DETERMINATION OF PERMEABILITY OF SOILS

UDC 624·113·433

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3

September 1985

Indian Standard

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0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 January 1985 after the draft finalized by the Soil Engineering Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 The Institution has already published a series of Indian Standards on methods of testing soils. It has been recognized that reliable and intercomparable test results can be obtained only with standard testing equipment capable of giving the desired level of accuracy. The concerned Committee has, therefore, decided to bring out a series of specifications covering the requirements of equipment used for testing soils in order 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 as covered in IS : 2720 (Part 17).

0.3 In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2 - 1960*.

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1. SCOPE

1.1 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. DIMENSIONS

2.1 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)-1980† of medium class shall apply.

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

†General tolerances for dimensions and form and position : Part 1 General tolerances for linear and angular dimensions (*second revision*).

3. MATERIALS

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

TABLE 1 METERIALS FOR CONSTRUCTION OF DIFFERENT EQUIPMENT PARTS

Sl No.	Equipment	Material	Special Requirements	Relevant Indian Standard
i)	Mould	Brass/ Gun Metal		IS : 292-1983* IS : 318-1981†
ii)	Drainage base	Brass/ Gun Metal		IS : 292-1961* IS : 318-1981†
iii)	Drainage cap	Brass/ Gun Metal		IS : 292-1961* IS : 318-1981†
iv)	Metal ring	Brass/ Gun Metal		IS : 292-1961* IS : 318-1981†
v)	Tie rod and fly nut	Mild Steel	Nickel/ chromoplated	IS : 4367-1967‡
vi)	Extension collar	Brass/ Gun Metal		IS : 292-1961* IS : 318-1981†

*Specification for leaded brass ingots and castings (*second revision*).
†Specification for leaded tin bronze ingots and castings (*second revision*).
‡Specification for alloy and tool steel forgings for industrial use.

4. CONSTRUCTION

4.1 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 leakproof and tested for an internal hydraulic pressure of 100 kPa.

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) Date of manufacture, and

c) Type of material.

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 a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

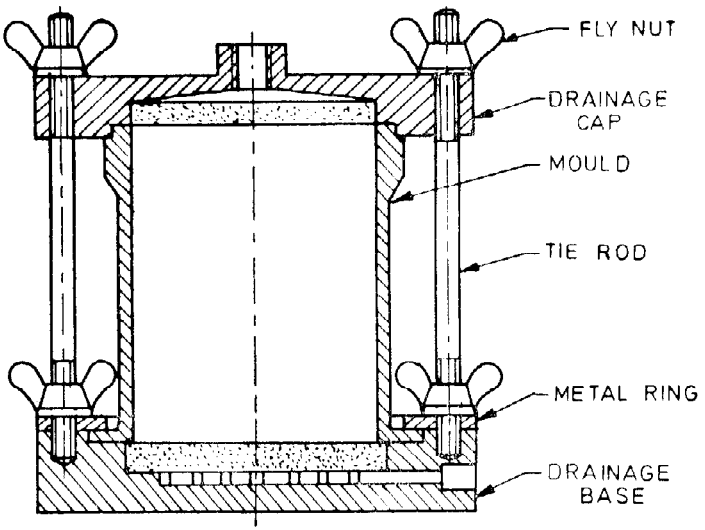
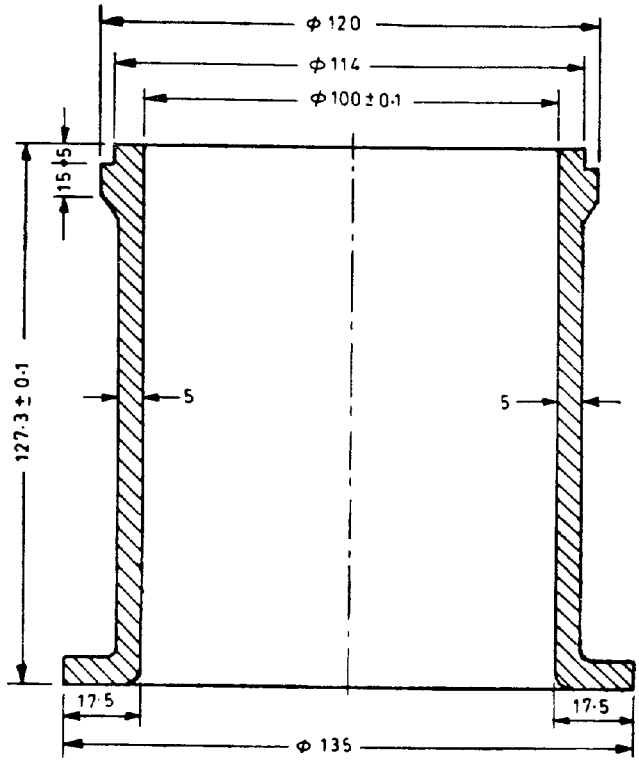
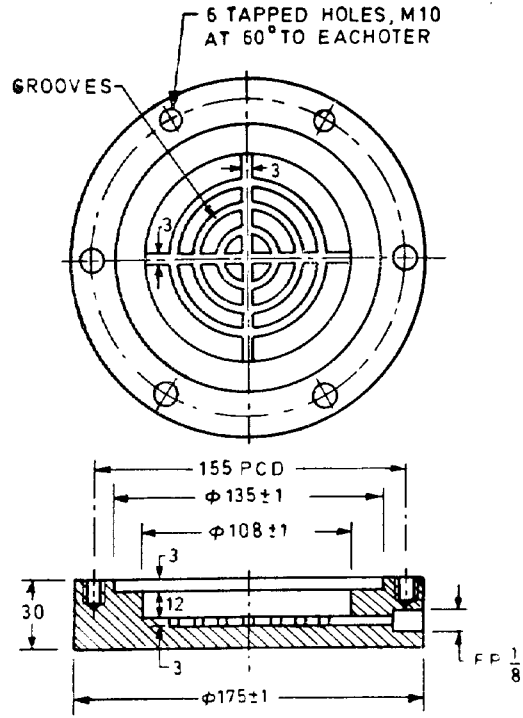


FIG. 1 PERMEABILITY CELL ASSEMBLY



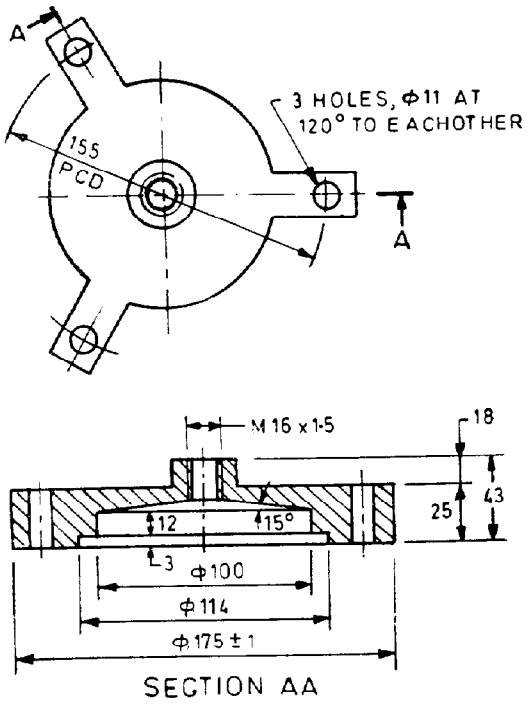
All dimensions in millimetres.

FIG. 2 MOULD



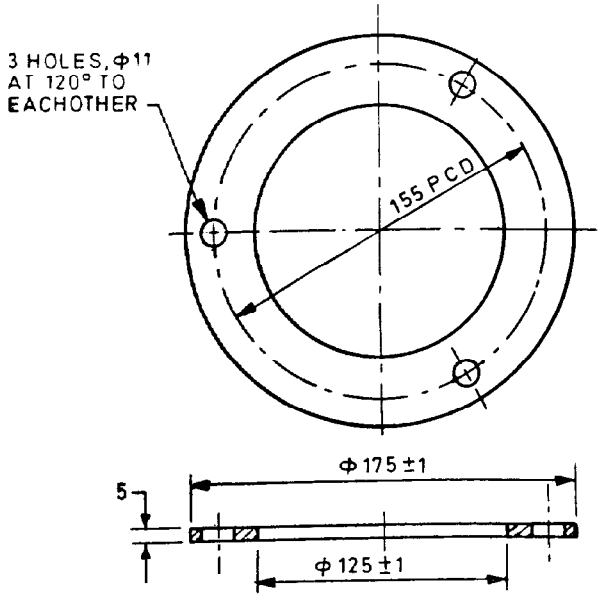
All dimensions in millimetres.

FIG. 3 DRAINAGE BASE



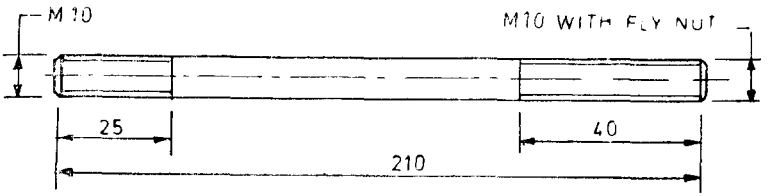
All dimensions in millimetres.

FIG. 4 DRAINAGE CAP



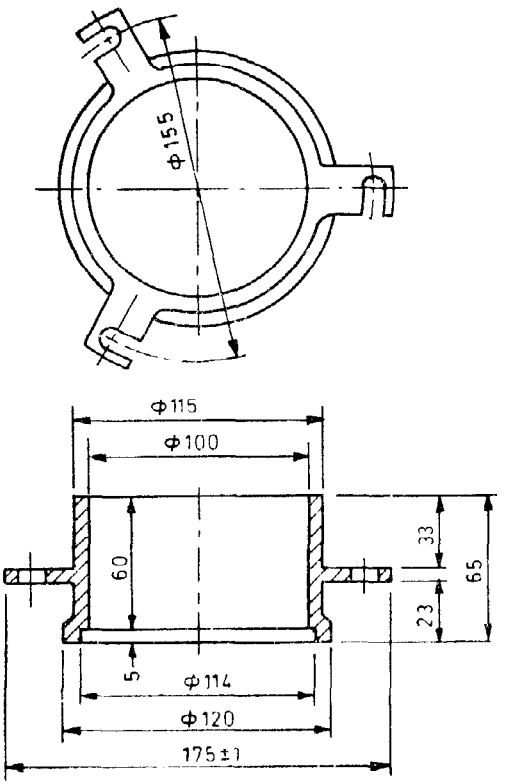
All dimensions in millimetres.

FIG. 5 METAL RING



All dimensions in millimetres.

FIG. 6 TIE ROD



All dimensions in millimetres.

FIG. 7 EXTENSION COLLAR

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INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	*Unit*	*Symbol*
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

Quantity	*Unit*	*Symbol*
Plane angle	radian	rad
Solid angle	steradian	st

Derived Units

Quantity	*Unit*	*Symbol*	*Definition*
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