



FIELD DENSITY, SPECIFIC GRAVITY & RELATIVE DENSITY

In-situ density of soil is an important parameter for soil engineers. This is needed for determination of bearing capacity of soils, stability analysis, natural slopes and for determining degree of compaction of fills.

Indian standards specify two different methods for in-situ density determination ; core cutter method for fine grained soils free from aggregates and the sand replacement method for fine, medium and coarse grained soils having stones and pebbles etc. The apparatus for sand replacement method as specified in ASTM D-1556 is also covered in our range of equipment.

●● HS14.05

Field Density Kit IS:2720 (Part XXIX)

The kit consists of :-

- i) Cylindrical core cutter 100mm inner dia x 130mm long with bevelled cutting edge and having wall thickness of 3 mm.
- ii) Steel dolley 100 mm inner dia x 25 mm high.
- iii) Rammer with steel rod for driving the core cutter.



HS14.05

ACCESSORIES:

HS 14.05.1 Cylindrical core cutter 100 mm dia x 130 mm long.

HS14.05.2 Steel Dolley (Common for all sizes)

HS14.05.3 Rammer with steel rod.

HS14.05.4 Cylindrical core cutter 100 mm dia x 250 mm long.

HS14.05.5 Cylindrical core cutter 100 mm dia x 127.4 mm long.

●● HS14.10

Sand Pouring Cylinder (Small)

The apparatus is suitable for field density estimation of fine and medium grained soils, as per IS: 2720 (Part XXVIII). It consists of:

- i) Sand Pouring Cylinder 115 mm internal dia with conical funnel and shutter.
- ii) Calibrating Container, 100mm inner dia and 150mm deep with flange 50 mm wide.
- iii) Metal tray 300mm square x 40mm deep with a 100mm dia hole at the centre.



HS14.10

ACCESSORIES:

HS14.10.1 Metal tray 300 mm square x 40 mm deep without hole.

HS14.10.2 Glass plate 450 mm square x 9 mm thick.

HS14.10.3 Dibber.

HS14.10.4 Scraper.

●● HS14.15

Sand Pouring Cylinder, (Large)

The apparatus is suitable for estimation of field density of fine, medium and coarse-grained soils, as per IS : 2720 (part XXVIII) and consists of :-

- i) Sand Pouring Cylinder, 215 mm internal dia, with conical funnel and shutter.
- ii) Calibrating container 200 mm inner dia x 250 mm high with 75 mm wide flange.
- iii) Metal tray 450 mm square x 50 mm deep with a 200 mm dia hole at the centre.

ACCESSORIES:



HS14.15

HS14.15.1 Metal tray 450 mm square x 50 mm deep without hole.

HS14.15.2 Glass plate 600 mm square x 10 mm thick.

HS14.10.3 Dibber.

HS14.10.4 Scraper.

●● **HS14.16**

**Sand Density Cone
conforming to ASTM D-1556**

Used for the determination of in-situ density of soils containing particles not greater than 2 inch in diameter. The equipment consists of a brass cone provided with flange at the bottom and a valve at the top. It is provided with another cone at the top of the valve with arrangement to attach a standard plastic sand jug. Supplied complete with a density plate and one sand jug with an adopter for attaching the standard plastic sand jug.



HS14.16

ACCESSORIES:

HS14.16.1 Plastic Sand Jug.

HS14.16.2 Density Plate.

●● **HS14.20**

Pycnometer

Test is performed as per IS:2720 (Part-III). Suitable for determination of specific gravity of sand and fine gravel.

The apparatus consists of a glass jar of 1 kg capacity, complete with brass cone, rubber seal and screwed cap.



HS14.20

ACCESSORIES:

HS14.20.1 Brass Cone

HS14.20.2 Rubber seals (pack of 10)

●● **HS14.25**

Density Bottle

It is performed as per IS:2720 (Part-I). Suitable for determination of specific gravity of fine soils. The apparatus consists of a 50 ml density bottle with capillary vent leak proof stopper.

●● **HS14.30**

Density Bottle

It is performed as per IS:2720 (Part-I). Density bottle of 100 ml with capillary vent leak proof stopper.



HS14.25 - HS14.30