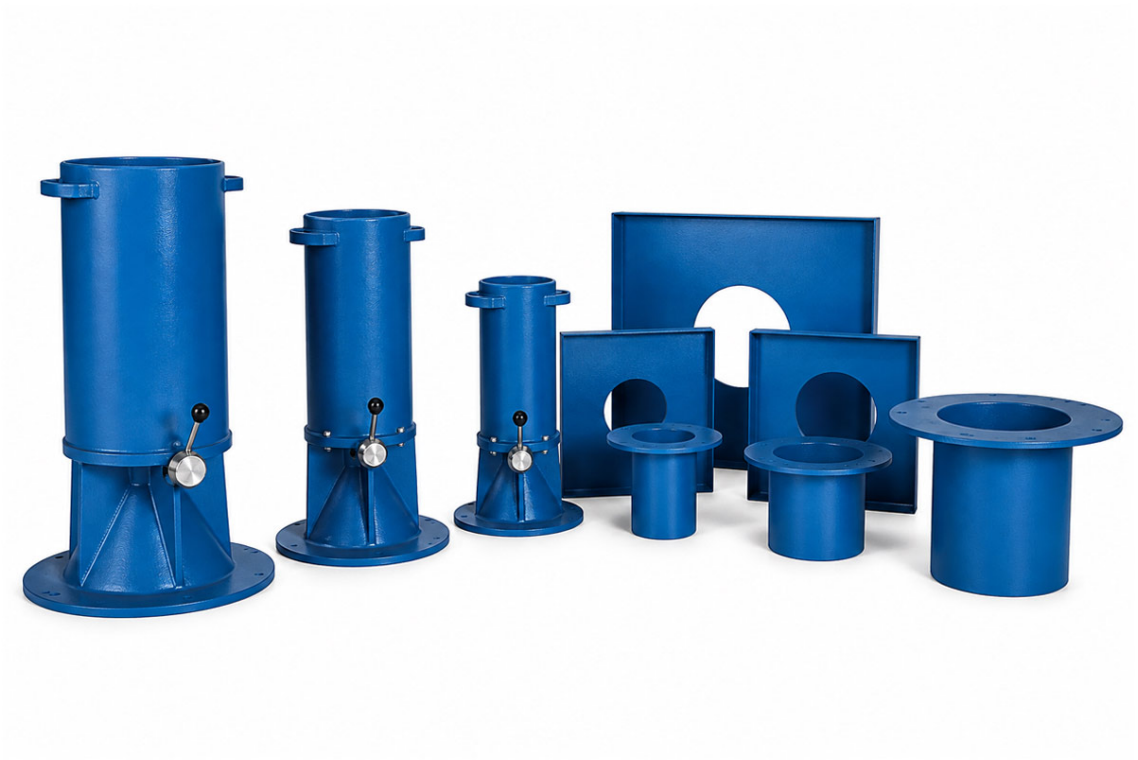
Sand Replacement Test Set

LT-S0015 / LT-S0016 / LT-S0017 | Sand replacement method

Sand pouring cylinder • Centre-hole tray • Calibration container



3 sizes

FIELD DENSITY TEST CONFIGURATIONS

100 / 150 / 200

TEST SET DIAMETERS • mm

BS 1377-9 • BS 1924-2

Photographs and Set Components

Three sizes of pouring cylinder, tray and calibration container

The Sand Replacement Test Set determines the in-situ density of compacted soil. Controlled filling of the test excavation with calibrated sand establishes hole volume, which is evaluated with the mass of removed soil to calculate density.

POURING CYLINDER

Holds dry test sand and delivers it through the valve to the excavation.

METAL TRAY

The central opening positions the hole and pouring apparatus at the same location.



FLOW VALVE

Starts and stops the flow of test sand in a controlled way.

CALIBRATION CONTAINER

Used to determine the bulk density of the test sand.



Sand pouring cylinders and flow valves

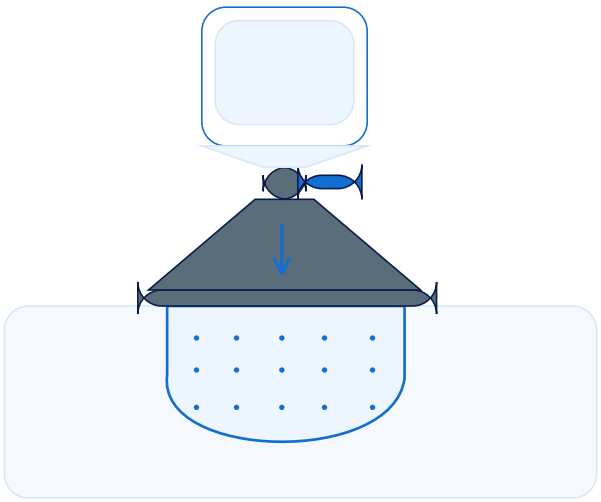


Centre-hole trays and calibration containers

Test-Hole Volume from Calibrated Sand

Calibrate sand • Excavate and weigh • Fill with sand • Calculate density

SAND CYLINDER + VALVE + TEST EXCAVATION



VOLUME = HOLE SAND MASS / SAND BULK DENSITY

APPLY THE CONE AND BASE SAND CORRECTION

Wet density = excavated wet soil mass / volume

Use moisture content to calculate dry density

REPRESENTATIVE SAND REPLACEMENT DIAGRAM • NOT TO SCALE

Calibrate the Sand

Determine sand bulk density with the container. Record cone and base filling correction.

Prepare the Excavation

Position the tray. Collect and weigh all soil removed from the test hole.

Fill and Calculate

Fill with sand. Apply the correction and calculate hole volume and soil density.

The initial and final apparatus masses give total sand used. Subtract the calibrated sand mass required to fill the cone and base to obtain sand mass in the hole alone. Convert this mass to excavation volume using the calibrated sand bulk density.

Calibration and Density Calculation

Use clean, dry, free-flowing test sand. Maintain the same sand and filling conditions throughout the series. Determine bulk density and the apparatus cone/base correction by calibration.

Divide excavated wet soil mass by hole volume to obtain wet density. When moisture content w is expressed as a decimal on a dry-mass basis, dry density is $\rho d = \rho / (1 + w)$.

Model and Test Sand Selection

LT-S0015 provides a Ø100 mm arrangement, LT-S0016 Ø150 mm and LT-S0017 Ø200 mm. Each set includes a matching pouring cylinder, metal tray and calibration container.

LT-S0020 300-600 µm and LT-S0021 600 µm-1.18 mm test sand options are available separately. Match set and sand selection to the method and soil conditions.

Models and Technical Specifications

Three set sizes for sand replacement testing

Model / Component	Description / Specification
LT-S0015	Ø100 mm • 30 × 30 × 44 cm • 8 kg
LT-S0016	Ø150 mm • 30 × 30 × 57 cm • 16 kg
LT-S0017	Ø200 mm • 50 × 50 × 66 cm • 27 kg
Pouring Cylinder Codes	LT-S0015/1 • LT-S0016/1 • LT-S0017/1
Calibration Container Codes	LT-S0015/2 • LT-S0016/2 • LT-S0017/2
Metal Tray Codes	LT-S0015/3 • LT-S0016/3 • LT-S0017/3
Cylinder Material	Accurately machined cast aluminium
Tray and Calibration Container	Plated sheet steel
Test Sand Options	LT-S0020: 300-600 µm • LT-S0021: 600 µm-1.18 mm
Operation	Mechanical • No electrical connection required

Retain Sand Calibration and Field Mass Records Together

Record sand density, cone/base correction, initial and final apparatus masses and excavated soil mass. State the moisture content used to calculate dry density.

Sand Replacement Test Workflow

01
Calibrate
Establish sand density and correction.

02
Excavate
Collect and weigh all excavated soil.

03
Fill
Deliver sand into the hole by controlled flow.

04
Calculate
Calculate hole volume and soil densities.

Product Page | liyatest.com.tr/en/urun/sand-replacement-test-set/