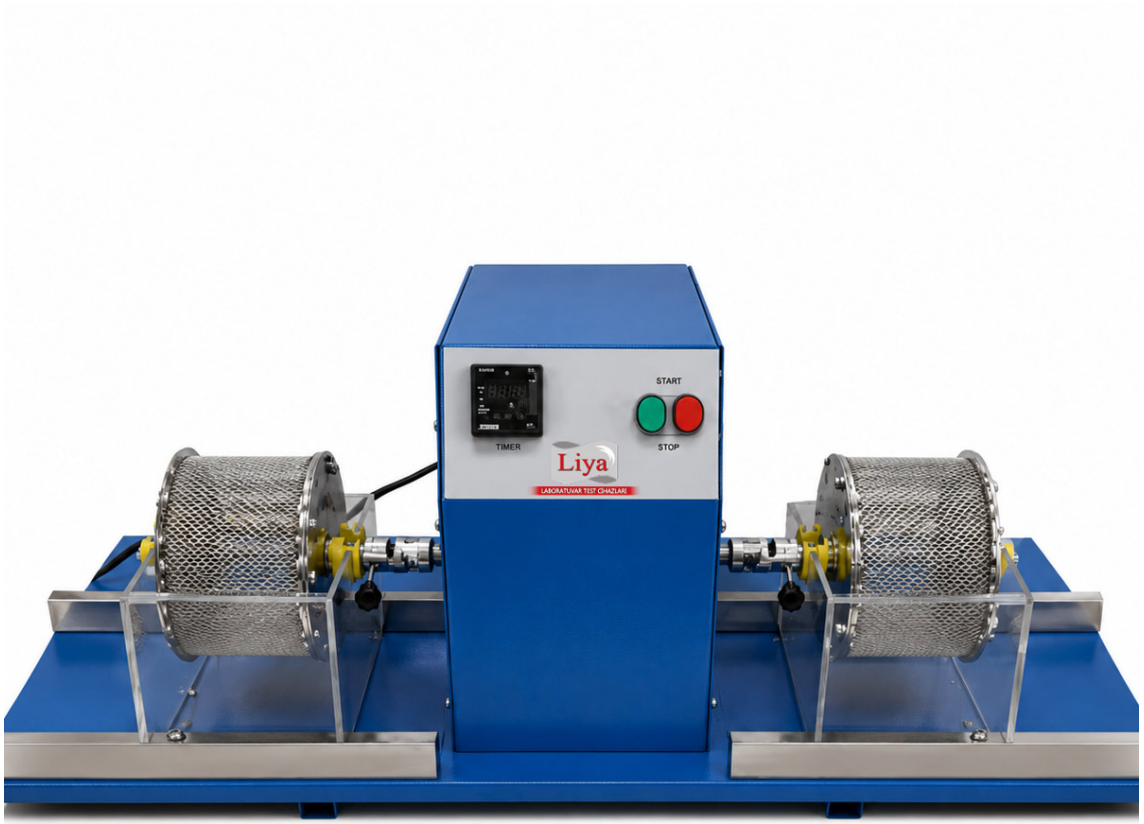
Slake Durability Test Device

LT-R0002 | Evaluation of wetting, drying and abrasion effects

Two-drum system • Constant rotation speed • Digital timing



20 rpm

CONSTANT ROTATION SPEED

2 / 4 drums

STANDARD / ADDITIONAL DRUM OPTION

Slake Durability • Wetting and drying cycles • Dry-mass assessment

LT-R0002

Photographs and Components

Stainless-steel mesh drums, transparent water tanks and central drive unit

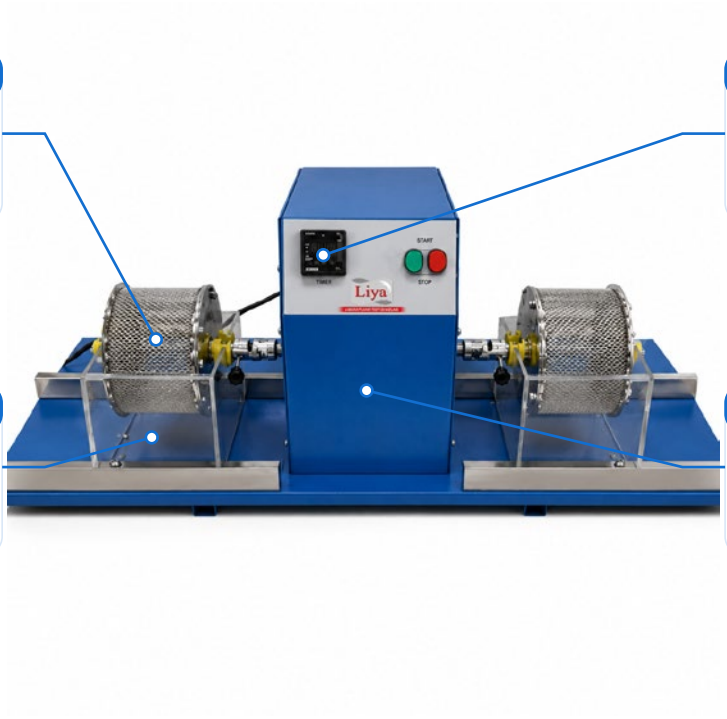
The Slake Durability Test Device evaluates resistance of shale and similar weak rocks to wetting, drying and abrasion. Specimens are placed in mesh drums rotating in water. The retained dry mass after testing is used to calculate the durability index.

MESH DRUMS

Stainless-steel mesh with 2 mm openings allows disintegrated fine particles to pass out.

DIGITAL TIMER

The motor stops automatically when the preset test duration is complete.

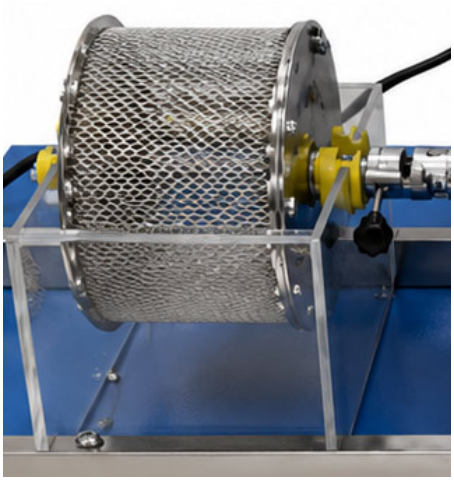


TRANSPARENT WATER TANKS

The tanks allow water level and specimen contact with water to be monitored.

CENTRAL DRIVE

The motorised unit rotates the drums at a constant speed of 20 rpm.



Mesh drum, shaft connection and transparent water tank



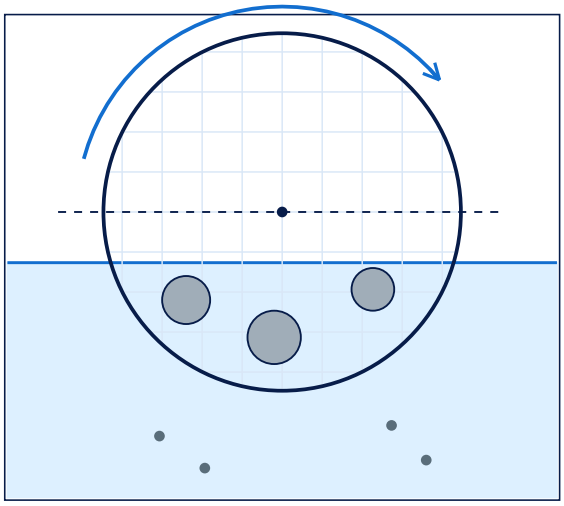
Digital timer and start / stop buttons

LT-R0002

Rotation, Wetting and Mass Loss

Partial immersion • Abrasion in the mesh drum • Retained dry mass

ROTATING MESH DRUM



WATER LEVEL

20 mm BELOW THE AXIS

Controlled Wetting

Maintain water about 20 mm below the drum axis. Rotation brings the specimens into contact with water.

Rotation and Abrasion

At 20 rpm, pieces contact each other and the mesh. One rotation cycle in the reference method lasts 10 minutes.

Retained Material

Fine particles pass through the 2 mm mesh. Material retained in the drum is dried and weighed again.

The index is the ratio of retained dry rock mass to initial dry rock mass. Id2 after the second cycle represents two wetting and three drying stages. Drying and weighing are separate laboratory operations.

Second-cycle Index

Id2 (%) = 100 × m2 / m0

m0: Initial dry rock mass.

m2: Dry rock mass retained after the second cycle. Drum mass is excluded from both quantities.

Interpreting the Result

A higher index indicates that a larger proportion of the initial mass remains in the drum. A lower index indicates greater disintegration.

Compare results obtained with similar specimen preparation and test conditions.

LT-R0002

Technical Specifications

LT-R0002 • Drum geometry, rotation speed, timing and dimensions

Technical Feature	Value / Function
Product Code	LT-R0002
Rotation Speed	20 rpm
Standard Configuration	Two drums
Additional Drum Option	Two additional drums for a total of four
Drum Dimensions	Ø140 mm diameter × 100 mm length
Mesh Opening	2 mm
Drum Material	Stainless steel
Water Tanks	Transparent
Timing	Digital timer; automatic stop at preset duration
Water Level	Approximately 20 mm below the drum axis
External Dimensions	35 × 74 × 30 cm
Weight	15 kg

Reference Test Method

ASTM D4644-16 was withdrawn in 2025. The method evaluates slake durability of weak rocks using two wetting and three drying stages.

Test Workflow

01
Prepare and Weigh
Dry the specimen and determine initial dry mass.

02
Run First Cycle
Rotate in water; dry and weigh retained material.

03
Run Second Cycle
Repeat wetting; dry and weigh retained material.

04
Calculate Index
Compare retained dry mass with initial mass.

Product Page | liyatest.com.tr/en/urun/slake-durability-test-device/