



**Sand, Aggregate & Fillers  
Testing Equipment**

# In-situ Sampling and Preparation

## Riffle Sample Divider

ELC 445 & ELC 446

Ref. Standards: ASTM C 136, D421, D422, D427, D4517, D452, D457, D806, D4318, BS: 812 (Part 103), 1377, AASHTO T27, T87.

For the rapid collection of true representative samples from aggregates, sand and fillers, sample divider is required.

Riffle Sample Divider consists of a metal box fitted with a series of chutes of equal width which discharge the material alternatively in opposite directions into separate pans. The chutes of the riffle are steep enough to allow rapid flow of the material.

Supplied complete with three containers.



ELC 445



ELC 446

Following models are available:

Model Cat. No.	Slot width mm	No. of Slots	Approx. Capacity d m <sup>3</sup>
ELC 445	13	14	2.1
ELC 446	25	16	4.4
ELC 446-1	19	8	4.1
ELC 446-2	30	8	4.1
ELC 446-3	38	8	2.1
ELC 446-4	50	8	4.1
ELC 446-5	64	8	4.1

### Ordering Information :

ELC 445	Riffle Sample Divider, 14 Slots.
ELC 446	Riffle Sample Divider, 16 Slots.
ELC 446-1	Riffle Sample Divider, 19 Slots.
ELC 446-2	Riffle Sample Divider, 30 Slots.
ELC 446-3	Riffle Sample Divider, 38 Slots.
ELC 446-4	Riffle Sample Divider, 50 Slots.
ELC 446-5	Riffle Sample Divider, 64 Slots.

## Determination of Flakiness & Elongation

Aggregates which are flaky and/or elongated will often lower the workability of a concrete mix and may also affect long term durability. In bituminous mixtures, flaky aggregates make for a harsh mix and may also crack and break up during compacting by rolling. The flakiness of aggregates is determined by measuring the thickness of individual particles. Edilab offers thickness gauge and length gauge with ISI certification mark check flakiness index and elongation index of the aggregate respectively.

### Thickness Gauge

with ISI Certification Mark, BS:812

ELC 450-BS



ELC 450-BS

## Length Gauge

ELC 451-BS

Ref. Standard - BS-812  
Constructed from steel, mounted on a hardwood base.



ELC 451-BS

### Ordering Information :

ELC 450 - BS	Thickness Gauge
ELC 451 - BS	Length Gauge

## Specific Gravity and Water Absorption

### Density Basket

ELC 453

Ref. Standard - BS-812  
Ruggedly constructed from galvanised wire mesh, 20 cm dia x 20 cm high (approx.).



ELC 453

### Ordering Information :

ELC 453	Density Basket
<b>Optional Accessories :</b>	
ELC 9933	Buoyancy Balance

## Bulk Density, Voids and Bulking

### Angularity :

The angularity or absence of rounding of the particle of an aggregate is a property which is of importance, because it effects the ease of handling of a mixture of aggregate and binder, for example, the workability of concrete, or the stability of mixtures that depends on the interlocking of the particles.

The bulk density and voids in between aggregates can be ascertained using the following equipment :

### Cylindrical Metal Measures,

ELC 454

Cylindrical Metal Measures Consists of one each of the following measures:

- ELC 45401 Measure 3 litres
- ELC 45402 Measure 15 litres
- ELC 45403 Measure 30 litres

Supplied Complete with ELC 345 Tamping Rod of 16mm dia x 60 cm.



ELC 454

### Ordering Information :

ELC 454	Cylindrical Metal Measures
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## Bulk Density

ELC 339

For determining the unit weight of aggregates. The Bulk Density measures indicated in ELC 339 can be utilized to do the test.

### Ordering Information :

ELC 339	Bulk Density
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## Mechanical Properties of Aggregates

### Crushing Value :

Ref. Standards : BS:812, ASTM C131, C535, AASHTOT96

The selection of proper aggregate for a given application is essential to attain the desired quality. Various characteristics required to be determined for the selection of appropriate aggregate from the wide range are available. The following mechanical tests are designed to meet this requirement.

## Crushing Value Apparatus

ELC 455



Ref. Standard - IS:9376

This apparatus is used for measuring resistance of an aggregate to crushing, as per IS:2386, (Part 4).

**The equipment consist of the following replaceable parts:**

- ELC 45501 Cylindrical Cell
- ELC 45502 Plunger
- ELC 45503 Base Plate
- ELC 45504 Tamping rod
- ELC 45505 Metal measure

### Ordering Information :

ELC 455-BS	Crushing Value Apparatus
ELC 455-1-S	Crushing Value 75mm

## Aggregate Impact Value

It is for determining the aggregate impact value and has been designed in accordance with BS - 812

The sturdy construction consists of a base and support columns to form a rigid frame work around the quick release trigger mechanism to ensure an effective free fall of the hammer during test. The free fall can be adjusted through  $380 \pm 5$  mm. The hammer is provided with a locking arrangement.

## Aggregate Impact Tester with Blow Counter

ELC 456

Ref. Standard - BS - 812

The equipment consist of the following replaceable parts :

- ELC 45601 Cylindrical Cup
- ELC 45602 Metal Measure
- ELC 45603 Tamping Rod
- ELC 45604 Automatic Blow Counter

### Ordering Information :

ELC 456 - BS Aggregate Impact Tester



ELC 456

## Abrasion

Ref. Standards - IS:2386 (Part 4), BS:812, ASTM C-131, C535, D2, AASHTO T96

Two types of machines for determining the abrasion value of coarse aggregates are offered.

## Deval Abrasion Testing Machine

(Also known as Deval Attrition Tester)

ELC 457



ELC 457

The Devals Abrasion Testing Machine, ELC-457 is used to determine the aggregate abrasion value of coarse aggregates as described in BS: 812. The machine consists of two hollow cylinders, closed at one end and provided with tight fitting covers at the other end, mounted on a shaft at an angle of  $30^\circ$  to the axis of rotation. The shaft rotates at 30-33 r.p.m. through a reduction gearbox, coupled to a motor.

Supplied complete with a revolution counter but without abrasive charge.

**For Voltage Ratings please refer Page No. A 69**

## Los Angeles Abrasion Testing Machine with Abrasive Charge

ELC 458

Ref. Standards - BS:812, EN 1097-2, ASTM C81, C535

This machine is for determining the resistance to wear off small size coarse aggregates and crushed rock. The machine consists of a hollow cylinder, mounted on a sturdy frame on ball bearings. A detachable shelf which extends throughout the inside length of the drum catches the abrasive charge and does not allow it to fall on the cover. The drum is rotated at a speed of 30-33 rpm by an electric motor through a heavy duty reduction gear. Supplied complete with a tray for collection of the material.

**For Voltage Ratings please refer Page No. A 69**

**The equipment consist of the following replaceable parts :**

- ELC 45801-EN** Abrasive charge, consisting of a set of 12 hardened steel balls of 48 mm dia
- ELC 45801-ASTM** Abrasive charge, consisting of a set of 12 hardened steel balls of 48 mm dia



ELC 458

### Ordering Information :

<b>ELC 457</b>	Deval Abrasion Testing Machine.
<b>ELC 458-BS/EN</b>	Los Angeles Abrasion Testing Machine as per BS/ASTM standard.
<b>ELC 458 ASTM</b>	Los Angeles Abrasion Testing Machine as per BS/ASTM standard.

**Note:** Los Angeles with canopy is also available on request.

## Polished Stone Value (PSV)

The Polished stone Value provides a measure of the resistance of road aggregates to polishing under the action of vehicle tyres on a road surface, paving stones & paving blocks and gives a measure of the resistance to skidding. It is a fundamental test which is often used when selecting aggregates for road surfacing material.

## Accelerated Polishing Machine

ELC 461

Reference std. BS 812-114, ASTM D331

Specimens are manufactured in accurately machined and matched moulds; they are then removed from the moulds and located on the 'Road Wheel' The wheel is now rotated and enters in contact with solid rubber tyre, spring loaded.

Abrasive charges are continuously fed by mechanical feeders at fixed speed. Feed rates for corn emery are 20-34 g/min. Feed rate for flour emery is 2-4 gm/min. The water is supplied at a controlled rate of 20 -34 ml/min & 5- 8 ml/min. respectively for Corn emery & flour emery through a water container.

Road wheel speed is 315 to 325 rpm & applied load on specimens 715 to 735 N.

Used water and abrasives are collected in a large removable tray. Electrical supply is protected by the thermal cutouts and an emergency stop button

**For Voltage Ratings please refer Page No. A 69**



ELC 461

### Ordering Information :

<b>ELC 461-BS</b>	Accelerated polishing Machine
<b>ELC 461-ASTM</b>	Accelerated polishing Machine
<b>Optional Accessories :</b>	
<b>ELC 46101</b>	Corn Emery, ungraded 3 kg pack
<b>ELC 46102</b>	Flour emery ungraded 3 kg pack