



Aimil Ltd.

Instrumentation & Technologies



Sand, Aggregate & Fillers

Testing Equipment

Sand



In-situ Sampling and Preparation

Riffle Sample Divider

Ref. Standards: IS:1607-1977, 2720, 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.

Following models are available:

Model Cat. No.	Slot Width mm	No. of Slots	Approx. Capacity d m ³
AIM 445	13	14	2.1
AIM 446	25	16	4.4



AIM 445



AIM 446

Ordering Information :

AIM 445 Riffle Sample Divider, 14 Slots.

AIM 446 Riffle Sample Divider, 16 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. Aimil offers thickness gauge and length gauge with ISI certification mark as per IS: 2386 (Part 1) to check flakiness index and elongation index of the aggregate respectively.

Thickness Gauge with ISI Certification Mark, IS:2386 (Part-1)

Constructed from heavy gauge sheet steel with ISI Certification Mark, IS:2386 (Part 1)



AIM 450

Length Gauge with ISI Certification Mark, IS:2386 (Part-1)

Constructed from steel, mounted on a hardwood base, with ISI Certification Mark, IS:2386 (Part 1)



AIM 451

Ordering Information :

AIM 450 Thickness Gauge

AIM 451 Length Gauge



Specific Gravity and Water Absorption

Density Basket

Ref. Standard - IS:2386 (Part 3)

Ruggedly constructed from galvanised wire mesh, 20 cm dia x 20 cm high (approx.).



AIM 453

Ordering Information :

AIM 453 Density Basket

Optional Accessories :

AIM 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, with ISI Certification Mark, IS:2386 (Part-3)

Cylindrical Metal Measures with ISI Certification Mark, IS:2386 (Part 3) Consists of one each of the following measures:

AIM 45401 Measure 3 litres

AIM 45402 Measure 15 litres

AIM 45403 Measure 30 litres

Supplied Complete with AIM 345 Tamping Rod of 16mm dia x 60 cm long having ISI Certification Mark IS:10086

Bulk Density :

Ref. Standard - IS:1199

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



AIM 454

Ordering Information :

AIM 454 Cylindrical Metal Measures

AIM 339 Bulk Density

Mechanical Properties of Aggregates

Crushing Value :

Ref. Standards :

IS:2386 (Part 4), 9377, BS:812, ASTM C131, C535, AASHTO T96

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

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 :

AIM 45501 Cylindrical Cell

AIM 45502 Plunger

AIM 45503 Base Plate

AIM 45504 Tamping rod

AIM 45505 Metal measure



AIM 455

Ordering Information :

AIM 455 Crushing Value Apparatus

Can also be provided as per BS Standards.

Aggregate Impact Value

It is for determining the aggregate impact value and has been designed in accordance with IS:2386 (Part 4), IS:9377.

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 ± 5 mm. The hammer is provided with a locking arrangement.

Aggregate Impact Tester with Blow Counter

Ref. Standard - IS:9377

The equipment consist of the following replaceable parts :

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



AIM 456

Ordering Information :

AIM 456 Aggregate Impact Tester

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 aggregates are offered.

Los Angeles Abrasion Testing Machine with Abrasive Charge

Ref. Standards - IS:10070

This machine is for determining the resistance to wear of 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.

Suitable for operation on 415V, 3 phase, 50Hz, AC Supply.

Digital Counter Fitter

The equipment consist of the following replaceable parts :

- AIM 45801** Abrasive charge, consisting of a set of 12 hardened steel balls of 48 mm dia
- AIM 45802-1** Digital controller box



AIM 458

Ordering Information :

AIM 458 Los Angeles Abrasion Testing Machine

Los Angeles with canopy is also available on request.



Flexural Test

It is essential to determine the flexural strength, resistance to wear and abrasion properties of tiles for effective control.

Tile Flexure Strength Testing Machine

Capacity 200 kg.

Ref. Standard - IS:654, 1237

For clay roofing tiles (Mangalore Pattern) and Cement Concrete Flooring Tiles. This is a double lever (leverage 1:12) loading machine and the load is applied by flow of lead shots which automatically stops when the sample breaks. The load is applied at the rate of 450 to 550 N/minute (200 Kg/minute) and the accuracy of load indication and $\pm 2\%$. the sample is mounted between rollers 40mm dia or 20 mm dia.



AIM 460

Ordering Information :

AIM 460 Tile Flexure Strength Testing Machine

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

Reference std. BS 812

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

Suitable for operation on 220 V, 50 Hz, Single Phase, AC supply



AIM 461

Ordering Information:

AIM 461 Accelerated polishing Machine

Optional Accessories :

AIM 46101 Corn Emery, ungraded 3 kg pack

AIM 46102 Flour emery ungraded 3 kg pack



Tile Abrasion Testing Machine

Ref. Standard - IS:1237, 1706

The tile sample is pressed under a specified load against a grinding path, strewn evenly with an abrasive powder, revolving at the rate of 30 ± 1 rpm. At the end of 100 revolutions of the disc, the second parallel side of the tile is subjected to wear an equal number of revolutions of the disc.

The wear of the tile is measured using AIM48101 thickness measuring device (which is supplied at extra cost). The Abrasion Testing Machine consists of a replaceable grinding path, fitted on to a disc rotating

about its vertical axis. The rotating disc and the grinding path are enclosed by a circular tray. A bracket holds the specimen. The loading is by a counterbalanced lever. A funnel is provided to facilitate charging the grinding path with abrasive powder.

Supplied complete with automatic pre-set revolution counter and one 7.5 kg weight, but without abrasive powder and thickness measuring device.

Suitable for operation on 415 V, 50 Hz, 3 phase, AC Supply.



AIM 481

Ordering Information :

AIM 481 Tile Abrasion Testing Machine

Optional Extra :

AIM 48101 Thickness Measuring Device, with Dial Gauge, having 25 mm travel and 0.01 mm least count.

AIM 48103 Abrasive Powder.