



Aimil Ltd.

Instrumentation & Technologies



Cement, Lime Plaster & Mortar Testing Equipment

Cement



Fineness

To determine the fineness of cements, pozzolanas and other powdery materials, various international specifications recommend the use of "specific area" method. In the instrument described below, air permeability method is used to determine the specific surface as total surface area in cm^2/g of material.

Air Permeability Apparatus (Blaine Type) with ISI Certification Mark, IS:5516

Ref. Standards : IS:1727, 4031, 4825

It is a variable flow type Air Permeability Apparatus.

The equipment consist of the following replaceable parts :

AIM 39001	Permeability Cell.
AIM 39002	'U' Tube Manometer, mounted on stand.
AIM 39003	Perforated Metal Disc.
AIM 39004	Plunger.
AIM 39005	Rubber Stopper.
AIM 39006	Rubber Tube, 20 cm long.
AIM 39007	Filter Paper Discs (Twelve Nos.).
AIM 39008	Dibutylphthalate Liquid, 100 ml bottle.
AIM 39009	Punch.
AIM 39010	Non Perforated Disc.
AIM 39011	Suction Bulb.



AIM 390

Ordering Information :

AIM 390 Air Permeability Apparatus (Blaine Type)
with ISI Certification Mark, IS:5516

As per BS/ASTM is also available on request

Automatic Blaine Apparatus New

Ref. Standards : IS:1727, 4031, 4825

- Blaine apparatus is used to determine the fineness of cement
- The Aimil - DT Automatic Blaine has the following features:
 - Single touch operation:
 - Automatic control of the movement of fluid until the upper mark.
 - Automatic sensing of the upper & lower marks ensuring error free repeatable measurement of the time taken for the liquid column to fall.
 - Automatic measurement of temperature during the test using a Pt 100 probe
 - Automatic correction of formula for calculation of the Blaine value per IS:5516 with variation in temperature.
- Facility to operate in either Standalone Mode or through a Computer Controlled system complete with software.
- Login Facility as Supervisor & Operator
- Report Generation based on Date/Time, User type & type of cement
- Facility to measure Cement Sample Load
- Facility to Monitor and Configure various Cement types
- Timing accuracy up to 200mSec.
- Power Consumption less than 5W



AIM 391-1

Ordering Information :

AIM 391-1 Automatic Blaine Apparatus with standalone data recording & controlling system having inbuilt temperature monitoring facility

AIM 391-2 Automatic Blaine Apparatus with PC based data recording & monitoring system



Consistency and Setting-time

Apparatus for determining the normal consistency, standard consistency and time of setting of cement and lime in accordance with IS, ASTM, BS and AASHTO specifications.

Vicat Method :

Ref. Standards - IS:2542 (Part-2), 2645, 1727, 5513, BS:12, 146, 915, 1370, 4027, 4246, 4248, ASTM C-91, C-141, C-187, C-308, C-359, C-472 & AASHTO T-129, E-131

The procedure, as recommended in various standards, is for determining the quantity of water required to produce a cement paste of standard consistency. The standard consistency is attained when the 10 mm plunger of the apparatus penetrates the material to a pre-determined depth under free-fall. A new sample is prepared and tested with initial and final needles in accordance with the procedure described in various specifications.

Vicat Apparatus, with ISI Certification Mark, IS:5513

The equipment consist of the following replaceable parts :

- AIM 39301** Vicat Mould
- AIM 39302** Glass Base Plate
- AIM 39303** Initial Needle (in Plastic Case)
- AIM 39304** Final Needle (in Plastic Case)
- AIM 39305** Consistency Plunger (in Plastic Case)
- AIM 39306** Mild Steel Base Plate
- AIM 39307** Vicat Mould Split Type, with Clamping Ring



AIM 394

Ordering Information :

- AIM 394** Vicat Apparatus,
with ISI Certification Mark, IS:5513

As per BS/ASTM is also available on request.

Gillmore Needle Apparatus

This operation is used for determining setting time of hydraulic cement. It consists of a base with a vertical shaft and two horizontal arms, the lower arm being adjustable for height. Supplied complete with one initial needle, one final needle and a glass base plate.

The equipment consist of the following replaceable parts :

- AIM 39601** Initial Needle 1 / 12 inch dia. 1 / 4 lb.wt.
- AIM 39602** Final Needle 1 / 24 inch dia. 1 / 4 lb.wt.
- AIM 39603** Glass base plate.



AIM 396

Ordering Information :

- AIM 396** Gillmore Needle Apparatus

Soundness of Cement and Hydrated Lime

Le-Chatelier Apparatus :

The soundness of ordinary and rapid hardening portland cement, low heat portland cement and class-A lime can be determined by an expansion test using Le-Chatelier moulds as specified in IS:5514, 1727, 2645, 4031, 6932 (Part-9), BS:890, 915, 1370, 4027, 4226 and 4248.

Le-chatelier Mould with ISI Certification Mark, IS:5514

Ref. Standard - IS:5514

It consists of a small split cylinder forming a mould of 30mm internal dia. and 30 mm high. On either side of the split cylinder, two parallel indicating arms with pointed ends are fixed.

Two loops of suitable material and strength soldered to the upper half of the mould on each side of the central split is provided to facilitate demoulding of the hardened paste specimen after test

The resilience of the mould shall be such that the action of a mass of 300g applied shall increase the distance between the indicator ends of the needle by 17.5mm + 2.5mm without permanent deformation.

The mould is supplied complete with two glass plates and lead weight.



AIM 400



Extensibility of Mould Apparatus

(Resistance of Mould Test Apparatus)

This unit comprises of a metal sleeve with a hook and set of screw to fit over one of the mould pointers and a clamp to fit on to the other pointer of the mould. Le - Chatelier moulds should be checked periodically calibrated with this unit to check the state of the split cylinder. Supplied complete with over weight 300g \pm 1g.

Ordering Information :

AIM 400	Le-Chatelier Mould with ISI Certification Mark
AIM 400-S	Extensibility of Mould Apparatus (Resistance of Mould Test Apparatus)

Le-Chatelier Flask

Used for the determination of specific gravity of hydraulic cement as specified in IS:4031-II

Ordering Information :

AIM 401	Le-Chatelier Flask
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Shrinkage Bar Mould with ISI Certification Mark, IS:10086

Ref. Standard - IS:10086, IS:4031

ASTM C 151 also specifies the use of shrinkage bar moulds for the determination of soundness. The change in length of the specimen is determined by Length Comparator listed in the concrete section.

Two models are offered. One is provided with stainless steel smooth reference points while the other is provided with knurled and threaded reference points. Both the models are available as single mould and multiple mould compartments. Each mould is supplied complete with base plate and two reference points per compartment of mould.

Mould size : 25 x 25 mm section and 250 mm effective length (Distance between two inner-most reference points)



AIM 403



AIM 407

Ordering Information :

AIM 402	Shrinkage Bar Mould, single compartment with smooth reference point
AIM 403	Shrinkage Bar Mould, two compartments with smooth reference point
AIM 404	Shrinkage Bar Mould, four compartments with smooth reference point
AIM 405	Shrinkage Bar Mould, single compartment with knurled and threaded reference point
AIM 406	Shrinkage Bar Mould, two compartments with knurled and threaded reference point
AIM 407	Shrinkage Bar Mould, four compartments with knurled and threaded reference point

Optional Accessories :

AIM 40201	Set of 20, Smooth Reference Points
AIM 40501	Set of 20, Knurled and Threaded Reference Points

Laboratory Cement Autoclave

Ref. Standard - IS:4031 (Part -3)

The Laboratory Cement Autoclave is suitable for conducting accelerated soundness tests on Cement or the Autoclave expansion test.

The equipment consists of a Stainless Steel Pressure Vessel with insulated outer shell, fabricated out of high quality Stainless Steel Sheet. The pressure inside the vessel is controlled through a micro processor based PID controller. The equipment is supplied complete with spring loaded safety valve pressure gauge, PID controller with RTD for control of Heater unit.

Special Features :

- Rust proof stainless steel pressure vessel & enclosure
- Microprocessor based PID controller for accurately controlling the temperature hence pressure
- Three fold safety mechanism for the equipment & the operator
- Reliable silicon rubber lid sealing gasket
- Very Compact

Specification :

Working Pressure : $21 \pm 1 \text{ kg / cm}^2$ at 215°C
 Pressure Vessel : ID 150mm X Depth 500 mm
 Weight : 70 Kg
 Heater : 2000 Watts
 Supply : 220V, 50Hz, 1 phase
 Panel mounted PID controller with international safety certifications.

The equipment consist of the following replaceable parts :

AIM 408-203	Rubber Gasket, Viton	1 No.
AIM 408-2-01	Pressure Gauge, 0-42kg/cm ²	
AIM 40806-2	Safety Valve	
AIM 40845	Temperature Controller with Sensor	



AIM 408-2

Ordering Information :

AIM 408-2 Cement Autoclave, with Analog pressure Gauge & Digital temp controller

Note : 110V, 60Hz Models also available on request

Flow and Workability of Mortar and Lime

The Flow Test is carried out as recommended in IS:1727, 2645, 4031, 6932 (Part 8) on cement mortars, pozzolanas and limes. The specimen is placed on a flow table top which is then raised and dropped through a known height.

Flow of Mortar and Hydraulic Cement :

Ref. Standard IS:5512

Flow Table, Electrically Operated

The Flow Table consists of a brass table top 250 ± 2.5 mm dia, mounted on a rigid stand. The table top is reinforced with equally spaced ribs and allowed to drop through 12mm by a ground and hardened cam. The Motor Drive assembly using the geared motor box is designed to rotate the cam through the shaft at 100 rpm.

Complete with Flow mould 100mm base dia, 70mm top dia and 50mm high. The new design has better aesthetics and compact look.

Suitable for operation on 220V, 50Hz, single phase, AC supply.



AIM 411-1

Ordering Information :

AIM 410 Flow Table, Hand Operated

AIM 411-1 Flow Table, Electrically Operated

Sample Preparation

Digi Mortar Mixer

Automatic/Manual Mortar Mixer, 5 litre nominal capacity

Application: Preparation of standard prisms with Automatic/Manual mixing procedure in accordance with IS:10890, EN 196-1 & EN 196-3

This apparatus has specially been designed to prepare cement mortar for strength determination as specified in

IS:4031. It can also be used in mixing lime with pozzolonic materials for determination of lime reactivity (as per IS: 1727) and for uniform mixing of soils with additives such as lime, cement, etc.

Special Features :

- Microprocessor control
- Choice of automatic mixing cycles
- Sand Dispenser
- Water burette

The mixer is designed to mix mortars and cement pastes primarily to the requirements of EN 196. The mixing paddle has a planetary motion and is driven by a motor with a microprocessor based speed and program controller. The mixer can be operated either in an automatic or manual mode. When the mixer is used in the manual mode, the two mixing speeds can be changed by means of a soft touch button, without switching off the motor. In the automatic mode any one of the pre-set mixing programmes may be selected.

Also, AIM-412-4 has been designed to prepare cement mortar for strength determination as specified in IS:4031. It can also be used in mixing lime with pozzolonic materials for determination of lime reactivity (as per IS:1727) and for uniform mixing of soils with additives such as lime, cement.

Standard Supply includes:

Basic unit with stainless steel mixing bowl and stirrer, Program controller with status indicators to run the Mixer in fully Automatic or Manual mixing mode.

Technical Specifications :

	Rotational Speed (rpm)	Planetary Speed (rpm)
Low Speed	140+/-5	62+/-5
High Speed	285+/-10	125+/-10

Suitable for operation on 220V, 50Hz, single phase, AC supply.



The equipment consist of the following replaceable parts :

- AIM 412-4-A1** Scraper, Plastic 1no.
- AIM 412-4-A2** Paddle, S.S., conforming to IS 10890 & EN 196 Standards
- AIM 412-4-A3** Bowl, S.S., conforming to IS 10890 & EN 196 Standards
5 litre capacity(approx)
- AIM 412-4-A4** Cleaning Brush



AIM 412-4

Ordering Information :

- AIM 412-4** Automatic/Manual Digi Mortar Mixer, 5 litre nominal capacity

Note : For High Viscious Material Including Admixtures, AIM 412-2 Mortar Mixer 5 Ltr Mixer can provided on request

Vibration Machine

Ref. Standard - IS:4031, IS:10080, EN 196-1 413-2, EN 13454-2

A specially designed Vibration Machine is used for vibrating the mix in moulds at a frequency of $12,000 \pm 400$ cycles per minute, as per specifications.

The Vibrator is mounted over coiled springs and the vibrations are developed by means of a revolving eccentric shaft. The centre of gravity of the vibrator, including the cube and mould, is either at the centre of the eccentric shaft or within 25mm below it. The simple design of the machine facilitates easy assembly and dismantling of the cube moulds. Each machine is supplied AIM 414 one cube mould with ISI Certification Mark and poking rod.

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

The equipment consist of the following replaceable parts :

- AIM 414** Mould Steel, for 70.6 mm Cube with ISI Certification Mark as per IS:10080
- AIM 41801** Side Spring
- AIM 41802** Supporting Springs (Set of four)
- AIM 41803** Springs, for Fitting Mould (Set of two)
- AIM 41804** Endless Belt
- AIM 41805** Belt Guard
- AIM 41807** Eccentric Shafts with bearing



AIM 418-2

Ordering Information :

- AIM-418-2 : Vibration Machine with built-in Digital Timer, NABL Calibrated
- AIM-418-3 : Vibration Machine with built-in Digital Timer, without Calibration

Optional Accessories :

- AIM 41855-S1** Top attachment of vibration machine suitable for 50mm mould.

Note : CE mark available on request

Moulding

Cube Moulds :

For preparation of mortar and lime cubes, the following Cube Moulds are offered :



AIM 414



AIM 417-3

Ordering Information :

- AIM 414** Mould, Steel, for 70.6 mm Cube with ISI Certification Mark as per IS:10080
- AIM 417** Mould, Cast Iron for 50 mm Cube with ISI Certification Mark as per IS:10086.
- AIM 417-3** Mould Three Gang Cast Iron for 50 mm Cube



Preparation of Flexural Prisms : (For Rilem Cembureau Test)

Ref. Standard - IS:10078, 4031

Utilizes a specially designed jolting apparatus and requires the prisms to be compacted by allowing the mould to fall through a controlled height, at the rate of 60 jolts per min. The prisms of cement and pozzolana mortars are formed according to the standard procedure as given in the specifications.

Jolting Apparatus

Ref. Standard - IS:10078, EN-196-1-13454-2

The Jolting apparatus consists of a rectangular table, rigidly connected by two support arms to spindle at a horizontal distance of 800 mm from the centre of the table. The table can be raised and allowed to fall freely by a cam which is connected to a motor. The cam rotates at a rate of 60 rpm. A digital counter with sensor is provided, which stops the machine after 60 jolts. Locating pins are provided for mounting the mould compartments on the table. The mould, surrounded by the hopper, can be clamped rigidly to the table. Supplied complete with mould and hopper. Suitable for operation with 220V, 50 cycles, single phase, AC Supply.

The equipment consist of the following replaceable parts :

- AIM 42101** Counter
- AIM 42102** Aluminum hopper
- AIM 422** Jolting Mould



AIM 421

Ordering Information :

- AIM 421** Jolting Apparatus

Mould for Flexural Prism

Steel, three compartments, each of 40 x 40 x 160 mm



AIM 422

Compression Frame Jig Assembly

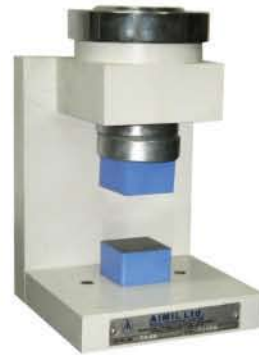


Ref. standard - EN 196-1: ASTM C109

This jig assembly is designed for the compression testing of 40 x 40 x 160 mm mortar prisms after breaking in flexure, also for the testing of 50 mm and 2 in square mortar cubes using the appropriate platens.

The frame is fitted with a spherical ball seating assembly to which is attached the upper platen.

The jig can be used on the complete range of AIMIL compression testing machines and has an overall height of 223 mm.



AIM 422-J

Flexural Jig Assembly



This jig is designed for the flexural testing of 40 x 40 x 160 mm mortar prisms. The frame is fitted with a ball seating assembly to which is attached the upper roller bearers.



AIM 422-F

Ordering Information :

- AIM 422** Mould for Flexural Prism
- AIM 422-J** Compression Frame Jig Assembly with 50mm platens.
- AIM 422-F** Flexural Jig Assembly

Demoulding Apparatus, for demoulding the specimens.



AIM 428



Ordering Information :

AIM 423	Demoulding Apparatus, for demoulding the specimens.
AIM 424	Briquette mould, Single gang with steel base plate
AIM 426	Briquette mould, Three gang with steel base plate
AIM 428	Gauging Trowel Ref. Standard - IS:4031 100 to 150 mm long blade with straight edge. Weight 210 ± 10g
AIM 429	Gauging Trowel, Ref. Standard - IS:5515, 200 mm long blade Weight 210 ± 10g

Modulus of Rupture Testing Machines (M.O.R.) Hand Operated/ Electrically Operated

Ref. standard - IS 771

A brief general description of these machines is :

Loading Unit :

The loading unit is of fully welded construction having a cross head, base and solid side plates. The hydraulic jack is fixed to the base. The platens of the machine are hardened, ground and polished.

The upper platen is provided with self-aligning action. To facilitate testing of various size specimens, suitable size spacers are provided.

Pumping Unit :

The hydraulic pumping unit is :

- Manually operated or
- Electrically operated

The loads are measured on Bourdon tube type load gauges which are calibrated against certified proving rings. The load gauges are fitted with a maximum load pointer.

Manually operated Pumping Unit is a two-speed design to facilitate fast approach of the platens for daylight closure, thus eliminating the need for the lead screw where as electrically operated machine has variable speed pumping unit.

In the Electrically Operated Pumping Units, load gauge is fitted with micro switches to switch-off the motor when the load approaches the maximum capacity of the gauge, to avoid any over-loading. Relays are incorporated so that the motor does not restart on its own after a power breakdown.

The electrically operated pumping units are provided with a control knob to adjust the pace rate which can be effectively controlled by an experienced operator during the course of testing, by observing the progress of the load gauge reading.

Rupture Test Attachment.

It is designed to test specimens of 25 x 25 x 150 mm for determining the modulus of rupture.

The attachment consists of a bearing beam on which are kept two rollers of 25mm diameter at a centre distance of 125mm the rollers are supported on brackets and are held in position by springs. The loading roller, 25 mm diameter, is flattened on one side to sit flat on the upper platen.

Ordering Information :

AIM 430-HO	M.O.R. Testing Machine Hand operated, Capacity 10kN
AIM 430	M.O.R. Testing Machine Electrically operated, Capacity 10kN

Optional Accessories :

AIM 430001	Rupture test attachment for M.O.R. Testing Machine.
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Cement Tensile Testing Machine



Ref. standard - EN-196-1

This Cement Tensile Testing Machine is primarily used to determine the tensile strength of briquette specimens of cement.

It can also be used to test the flexure strength of the sample. This test is commonly used by Cement Manufacturers in order to determine the quality of cement.

Specifications:

Loading speed of the single lever system:	10 +/- 2 N/Sec
Loading speed of the double lever system:	50 +/- 10 N/Sec
Flexure jaw diameter of the loading roller:	10mm
Supporting roller diameter:	10mm
Supporting roller distance:	100mm
Baffle plate span:	46mm



AIM 434-1

Ordering Information :

AIM 434-1	Cement Tensile Testing Machine
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Optional Accessories :

AIM 424	Briquette mould, Single gang with steel base plate
AIM 426	Briquette mould, Three gang with steel base plate



Permeability

Ref. Standards - IS:1727, 2645

Water proofing of concrete is desirable to increase the durability of concrete. Water proofness of concrete may be accomplished by using special water proof cements and admixtures.

The usefulness of the integral water proofing compounds or admixtures is established by measuring the permeability of standard mortar specimens prepared with and without the addition of such compounds.

Permeability test on pozzolana cement mortar and cement mortar with or without the addition of integral water proofing compound is carried out using a brass cell of 100 mm dia and 50 mm high. Each cell with collar is clamped in-between a base plate and a top plate with the help of tension rods and nuts. The cell assembly is mounted on the stand. The top plate is provided with an inlet and air release vent and the base plate is provided with an outlet.

A pressure chamber is fitted with a pressure regulator and a pressure gauge 0-10 kg/cm² indicating the chamber pressure, and a pressure gauge 0-7 kg/cm² indicating the test pressure.

In three cell model, a pressure chamber is supplied with foot pump, whereas in six cell model, the foot pump is not provided, as this model is intended to be used with a compressor.



AIM 438

Ordering Information :

- AIM 437** Permeability Apparatus, three cell model, with a Foot Pump
- AIM 438** Permeability Apparatus, six cell model, with an end pressure gauge

Note: Standard unit is supplied without compressor

Crushing & Grinding

Laboratory Ball Mill

Laboratory Ball Mill is primarily designed for grinding pigments. The material is ground at a specific speed by using a specific quantity of grinding media (steel balls) for a specific period.

The equipment is used for making the ground cement samples in the laboratory. Apart from the cement industry, it is also used in the paint, plastic, granite and tile industries.

The equipment is provided with a revolution counter for recording the revolutions.

Recommended balls for Ball Mill for 5kg capacity

40 mm dia	:	43 nos.
30 mm dia	:	67 nos.
25 mm dia	:	10 nos.
19 mm dia	:	71 nos.
12.5 mm dia	:	94 nos.

Suitable for operation on 415V, 50Hz, 3 Phase, AC supply.



AIM 441

Ordering Information :

- AIM 441** Laboratory Ball Mill, 5 Kg capacity
- AIM 441-10** Laboratory Ball Mill, 10 Kg capacity
- AIM 441-20** Laboratory Ball Mill, 20 Kg capacity

Optional Accessories :

- AIM 44101** Steel Ball, 40mm dia (Pack of 5kg.)
- AIM 44102** Steel Ball, 30mm dia (Pack of 5kg.)
- AIM 44103** Steel Ball, 25mm dia (Pack of 5kg.)
- AIM 44104** Steel Ball, 19mm dia (Pack of 5kg.)
- AIM 44105** Steel Ball, 12.5mm dia (Pack of 5kg.)
- AIM 44106** Steel Ball, 20mm dia (Pack of 5kg.)
- AIM 44118** Steel Ball, 36mm dia (Pack of 5kg.)

Note : Liner with canopy for noise reduction also Provided on request.



Jaw Crusher

- Designed to speed-up crushing of aggregates, Ores, Mineral, Coal and similar materials.
- Compact and rugged for laboratory and small production units.
- Manganese steel jaws adjustable upto 6 mm opening.
- 250kg materials can be crushed in approx. eight hours.
- Discharging opening adjustment range : 3-10mm
- Supported with strong steel frame.
- Suitable to crush any type of stone up to 45mm.
- Suitable for cement and chemical laboratories.

Suitable for operation on 415V, 50Hz, 3 Phase, AC supply.



AIM 442-1

Ordering Information :

AIM 442-1 Jaw Crusher

AIM 442-1-SP Single phase Jaw Crusher is also available on request

Pulveriser

Features

- The new design has better aesthetics and is more compact construction.
- Designed for grinding materials to produce fine mesh samples.
- It is suitable to grind up to 150 micron.
- The motor & gear assembly is supported by two nos. of bearing blocks and mounted on sliding carriage.
- The gap of two grinding wheels can be adjusted by rotating wheel of sliding carriage.
- Ideal for use in cement and chemical industries.

Specifications:

- Dia of Grinding Wheel 175mm
- Material fo Grinding Wheel High Carbon Steel having 55-60 HRC Hardness
- Input Size of Material $\leq 6\text{mm}$
- Output size of Material $\geq 150\mu$

Suitable for operation on 415V, 50Hz, 3 Phase, AC supply.



AIM 443-1

Ordering Information :

AIM 443-1 Pulveriser, New Design

AIM 443-1-SP Single phase Pulveriser is also available on request

Hydraulic Press

Used for making pallets of graphite or Infra Red transmitting materials.

For elemental analysis of Cements, Slags or Refractories by X-ray Fluorescence or Emission Spectromerty, the samples are mixed with graphite powder and pallets are made in the Hydraulic Press, compressing at desired pressures. The pallets are suitable for placing in the analyzing instruments.

Similarly, in the analysis of samples in the powder form by the Infra Red Spectrophotometers, these are mixed with Sodium Chloride or IR transmitting materials, pallets made as above and placed in the instruments for analysis.

The Hydraulic Press is a portable bench model and can be used on a sturdy table top. It is fitted with a load measuring gauge calibrated for 0 - 250 kN and also fitted with a pressure release valve for removing pallets. Dies for different pallet sizes and corresponding sample ejectors can be supplied as per requirement at extra cost.



AIM 915-S1

Ordering Information :

AIM 915-S1 Hydraulic Press 250 kN

Optional Extra :

- AIM 91501** Pallet Die 10 mm dia with Sample Ejector
- AIM 91502** Pallet Die 13 mm dia with Sample Ejector
- AIM 91503** Pallet Die 15 mm dia with Sample Ejector
- AIM 91504** Pallet Die 20 mm dia with Sample Ejector
- AIM 91505** Pallet Die 25 mm dia with Sample Ejector
- AIM 91506** Pallet Die 40 mm dia with Sample Ejector
- AIM 91507** Pallet Die 45 mm dia with Sample Ejector

Sample Ejectors for different pallet dies available are:

- AIM 9150101** Sample Ejector for AIM 91501
- AIM 9150202** Sample Ejector for AIM 91502
- AIM 9150301** Sample Ejector for AIM 91503
- AIM 9150401** Sample Ejector for AIM 91504
- AIM 9150501** Sample Ejector for AIM 91505
- AIM 9150601** Sample Ejector for AIM 91506
- AIM 9150701** Sample Ejector for AIM 91507

Heat of Hydration Apparatus

Ref. Std. ASTM C-186

When Portland cement is mixed with water, heat is liberated. This heat is called the heat of hydration, the result of the exothermic chemical reaction between cement & water. The heat generated by the cement's hydration raises the temperature of concrete.

During normal concrete construction, the heat is dissipated into the soil or the air and resulting temperature changes within the structure are not significant. However, in some situations, particularly in massive structures, such as dams, mat foundations, or any element more than about a meter or yard thick, the heat can not be readily released. the mass concrete may than attain high internal temperatures, especially during hot weather construction, or if high cement contents are used.

Heat of Hydration apparatus is used for determining heat of hydration of cements by measuring difference between heat of solution of dry cement and heat of solution of a separate sample partially hydrated for 7 days & 28 days. Contant-speed stirrer maintains uniform temperature throughout liquid and supplies sufficient agitation to keep solid reactant suspended in the acid mixture. This equipment consists of insulated wood case, vacuum jar with stopper; thermometer plus holder, glass funnel; stirring paddle and chuck.



AIM 9934

Ordering Information :

AIM 9934 Heat of Hydration apparatus