Concrete
Testing Equipment

Instrumentation & Technologies

Compressive Strength

Concrete is a man-made material, essentially mixed at site. The properties of concrete depend on the properties of its ingredients and their proportion and it is likely to vary from mix to mix. Tests must be conducted, therefore, to ensure that the concrete used is in accordance with design specifications. A frequent test, is the test of compressive strength, in which concrete samples are tested to failure.

Compression Testing Machines :

Aimil Series Compression Testing Machines are the finest of their types available. Their rugged construction and extreme simplicity makes it possible for even non-technical personnel to operate them with ease and complete dependability. In particular, the portable units, which are small in dimensions, sturdy and light in weight, make quality control testing possible in areas where commercial testing facilities are not available and where the transportation of larger and much heavier machines would be difficult.

Aimil Compression Testing Machines conform to IS: 14858(2000) and calibrated with an accuracy of ± 1% as per the requirement of 1828(Class1). It can also be supplied as per BS : 1881 and other associated International Standards. These machines are available in 50kN, 100kN, 250kN, 500kN, 1000kN, 2000kN, 3000kN & 5000kN Capacities.

Compression Testing Machines Classification :

- Analogue models.
- Digital models with pace rate indicators.
- Micro Controller based models with automatic pace rate controllers.
- Fully Automatic models.
- Servo Controlled (Hydraulic) Models.

Salient Features of Compression Testing Machines are :

- High stability.
- Self-aligning hardened platen assembly.
- Calibrated in kN against certified Proving Rings, traceable to NPL / NCCBM.
- Suitable for testing cubes, cylinders & blocks of various sizes.
- Using special platens, bricks can also be tested.
- Logged data printing facility through a parallel port interface available in digital and micro controller based versions.
- Calibration process accreditated by NABL (National Accreditation Board for Laboratories).
- Models with Touch Screen display is also available.
- Machines with CE mark also available, on special request.
- Operator's safety features like metal door with a perspex window and overload tripping device are provided in all models.
- Load & displacement control is available in Servo Controlled Machines.

Note: To select the model of compression Testing Machine, first select the capacity as per your requirement, then identify the type of machine required.

For further detailed specifications of the model identified, just scroll through the "Row" which will also have the corresponding catalogue number and other details of the equipment. For Digital types refer to the table "Digital".

General specifications mentioned in the columns are common to all types.

Analogue Compression Testing Machines

AIM 302H-AN, AIM 302E-AN, AIM 305H-AN, AIM 305E-AN, AIM 308H-AN, AIM 308E-AN, AIM 311H-AN, AIM 311E-AN, AIM 314E-AN, AIM 317E-AN & AIM 320E-AN

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 sized spacers are provided.

Pumping Unit :
The hydraulic pumping unit can be either :

- Manually operated • 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. Both the Pumping units, Manually operated and Electrically operated, are of two-speed design. The two speed pump facilitates fast approach of the platens for daylight closure, thus eliminating the need for the lead screw. 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.

AIM 314E-AN

Analogue Compression Testing Machines

CAPACITY	MODELS		Specs of Load Measuring Device (Analogue)		General Specifications					
	ANALOGUE		Load Gauge For Analogue models		Minimum Clearance Between Platens	Minimum Distance Between Side Plates	Platen Size	Piston Dia	Piston Stroke	
	Cat. No.									
(kN)	Hand Op.	Elec. Op.	Range(kN)	L.C.(kN)	(mm)	(mm)	(mm)	(mm)	(mm)	
50	302H-AN	302E-AN	50	0.2	415	260	140 Square	53	50	50.0mm & 70.6mm Cube
100	305H-AN	305E-AN	100	0.5	390	260	140 Square	78.7	50	50.0mm & 70.6mm Cube
250	308H-AN	308E-AN	250	1	390	260	140 Square	78.7	50	50.0mm, 70.6mm & 100mm Cube
500	311H-AN	311E-AN	500	2	435	260	140 Square	111.2	50	50.0mm, 70.6mm & 100mm Cube
1000	-	314E-AN	1000	5	390	260	222.0 Dia	157	50	100mm & 150mm Cube, 100mm & 150mm Dia Cylinder
2000		317E-AN	2000	10	370	340	222.0 Dia	222.2	50	100mm & 150mm Cube, 100mm & 150mm Dia Cylinder
3000		320E-AN	3000	10	400	400	320 Square	272.2	50	150mm to 300mm Cube & 300mm Diaa X300mm High Cylinder

NOTE :
- **Electrical Specifications :** Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply. Three phase unit if required must be separately mentioned in your order for the required capacity.
- **Brick Platens :** Appropriate brick platens can be provided at extra cost.
- **Spacers :** Set of spacers to suit specimen sizes mentioned against each model is supplied alongwith the machine.

***AIM 314H-AN** is a portable four pillar type model

Machines of higher capacities can be manufactured as per customer requirements.

Models with two/three gauges are also available on special request.

Ordering Information :	
AIM 302H-AN	Analogue Compression Testing Machine, Capacity 50kN, Hand Operated
AIM 302E-AN	Analogue Compression Testing Machine, Capacity 50kN, Electrically Operated
AIM 305H-AN	Analogue Compression Testing Machine, Capacity 100kN, Hand Operated
AIM 305E-AN	Analogue Compression Testing Machine, Capacity 100kN, Electrically Operated
AIM 308H-AN	Analogue Compression Testing Machine, Capacity 250kN, Hand Operated
AIM 308E-AN	Analogue Compression Testing Machine, Capacity 250kN, Electrically Operated
AIM 311H-AN	Analogue Compression Testing Machine, Capacity 500kN, Hand Operated
AIM 311E-AN	Analogue Compression Testing Machine, Capacity 500kN, Electrically Operated
AIM 314E-AN	Analogue Compression Testing Machine, Capacity 1000kN, Electrically Operated
AIM 317E-AN	Analogue Compression Testing Machine, Capacity 2000kN, Electrically Operated
AIM 320E-AN	Analogue Compression Testing Machine, Capacity 3000kN, Electrically Operated

Portable (Four Pillar Type) Compression Testing Machine, Capacity 1000kN

AIM 314H-AN, AIM 314H-DG-1 & AIM 314H-DG-2

The equipment consists of a Loading Unit, an integral double acting manually operated pumping unit fitted to the base of the machine and a calibrated Load Gauge/Digital Indicator fitted on the top. Pump has a detachable Handle. The hydraulic cylinder is placed on the base of the Loading Unit. It is supplied with NABL Calibration certificate.

AIM 314H-AN

AIM 314H-DG-1

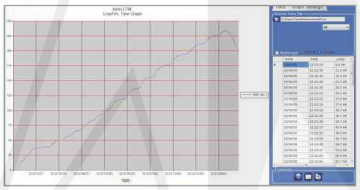
Specifications:

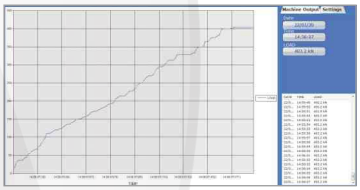
Capacity	:	1000kN
Max Vertical Clearance	:	355mm
Max. Horizontal Clearance	:	230mm
Platen Size	:	Dia 222mm
Piston Dia	:	157mm
Piston Stroke	:	25mm
Load Gauge Least Count	:	5kN
Digital Indicator Resolution	:	0.1kN

Technical Specifications of Digital Unit (Data Acquisition cum Datalogging System)

- System having analog 16-bit resolution and inbuilt LCD display
- Inbuilt Real Time Clock for real time operation & display in stand - alone mode
- Windows Based Software for unloading data and generating reports
- Data download through RS232 in text, excel & csv format.
- Online & offline graphs.
- Date and time setting facility
- Clear memory facility
- Operating Power supply –12V DC
- Input Voltage Range: 0 -5 V
- Accuracy: 0.1% of full scale
- Internal storage capacity of 2MB
- RS 232 communication
- Display peak load and instantaneous load value
- Converter RS232 to USB

Digital Indicator


Offline Graph


Online Graph

Mobile Application Features (only for AIM 314H-DG-2)

- Data Transfer: Capability to transfer data to an FTP server
- Complete Operations via Mobile App: Including easy Bluetooth connectivity
- Result Management: Accept and discard results for report saving after test completion
- Batch Status Display: Shows status as done or pending

Ordering Information :	
AIM 314H-AN	Analogue Compression Testing Machine, Capacity 1000kN, Hand Operated (Four Pillar Type)
AIM 314H-DG-1	Digital Compression Testing Machine, Capacity 1000kN, Hand Operated (Four Pillar Type)
AIM 314H-DG-2	Digital Compression Testing Machine, Capacity 1000kN, Hand Operated (Four Pillar Type) with Bluetooth facility.

Digital Compression Testing Machine, Electrically Operated, Four Pillar Type - 1000kN

AIM 314E-DG-2

The Digital Compression Testing Machine is designed to provide a simple, economical, and reliable solution for testing the compressive strength of concrete. It emphasizes ease of construction and operation, making it user-friendly and low maintenance. Its compact design is ideal for site applications. With minimal experience, operators can manually control the pace rate during the testing process.

System Description

- **Digital Controller:** Incorporates a digital display with a peak hold facility. The calibrated operating range is between 10% and 100% of the machine's capacity, with an accuracy of +/- 1% of the applied load.
- **Two-Speed Pump:** Allows fast approach of the platens for daylight closure and precise control over load application using a control lever and valve.
- **Loading Frame:** Fully welded construction with a four-pillar design. The precision-ground hydraulic piston is fixed to the base, with hardened, ground, and polished platens. The upper platen has a self-aligning action, and spacers are provided to accommodate various specimen sizes.
- **Electrically Operated Pumping Units:** Feature a control knob for pace rate adjustment, which can be effectively controlled by an experienced operator by observing the load gauge reading. Relays ensure the motor does not restart automatically after a power breakdown.

Technical Specifications

- Capacity: 1000 kN
- Max Vertical Clearance: 355 mm
- Platen Size: Dia 222 mm
- Piston Dia: 157 mm
- Max. Horizontal Clearance: 230 mm
- Piston Stroke: 25 mm
- Load Gauge Least Count: 5 kN
- Digital Indicator Resolution: 0.1 kN

Advanced Digital Features

- Analog 16-bit Resolution: Ensures high precision.
- Inbuilt LCD Display: For real-time operation and display.
- Standalone and Mobile Application Operation: Connects via Bluetooth.
- Date and Time Setting Facility
- Data Download: Through RS232 in text, Excel, and CSV formats.
- Memory Clearance Facility
- Operating Power Supply: 12V DC
- Input Voltage Range: 0-5 V
- Accuracy: 0.1% of full scale
- Display: Peak load and instantaneous load value
- RS 232 Communication
- NABL Accreditation: Calibration certification included.

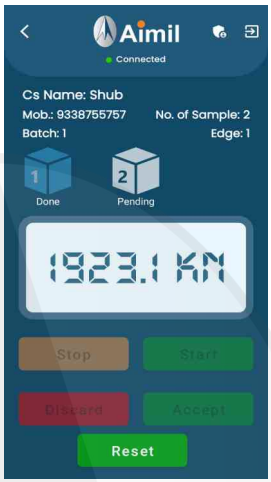
Mobile Application Features

- Data Transfer: Capability to transfer data to an FTP server.
- Complete Operations via Mobile App: Including easy Bluetooth connectivity.
- Result Management: Accept and discard results for report saving after test completion.
- Batch Status Display: Shows status as done or pending.

Technical Specifications Summary

- Capacity: 1000 kN
- Max Vertical Clearance: 355 mm
- Platen Size: Dia 222 mm
- Piston Diameter: 157 mm
- Max Horizontal Clearance: 230 mm
- Piston Stroke: 25 mm
- Digital Indicator Resolution: 0.1 kN
- Analog 16-bit Resolution: Yes
- Inbuilt LCD Display: Yes
- Standalone and Mobile Operation: Yes, via Bluetooth
- Date and Time Setting: Yes
- Memory Clearance: Yes
- Power Supply: 12V DC
- Input Voltage Range: 0-5 V
- Accuracy: 0.1% of full scale
- Display Peak Load: Yes
- NABL Accreditation: Yes

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



Ordering Information :

AIM 314E-DG-2	Digital Compression Testing Machine, Capacity 1000kN, Electrical operated (Four Pillar type) with Bluetooth facility

Digital Compression Testing Machines

AIM 302E-DG-1, AIM 305E-DG-1, AIM 308E-DG-1, AIM 311E-DG-1, AIM 314E-DG-1, AIM 317E-DG-1 & AIM 320E-DG-1

The Digital Compression Testing Machine has been designed to meet the need for a simple, economic and reliable means to test concrete for its compressive strength. The design emphasizes simplicity both of construction and operation and makes the machine easy to use and maintain.

The unit is compact, making it useful for site applications. The digital machines are provided with a pace rate indicator to indicate pace rate on a Bar Graph. With a little experience, the pace rate can be controlled manually while the test is in progress.

AIM 317E-DG-1

Key Features

- Meets the key specifications of IS -516 & IS 14858, and other ASTM, EN and BS standards depending on platens and accessories chosen.
- Pace deviation bar graph.
- Automatic stress determination and display.
- Overload safety protection.
- Self aligning platen with fast accessory change capability.
- Configurable Engineering Unit for machine selection.
- Predefined Machine capacities for each engineering unit. Specific capacity can be selected from the drop down menu.
- Flexible Calibration Points. Calibration can be done on 5 to 10 points.
- Peak Load, Peak Stress, Unique Record No. is displayed.
- In addition to compression, EDI has provision to configure more than one mode such as Flexure, Prism testing & Tensile Splitting strength. Each mode will have independent calibration points & calibration points are also flexible.
- Menu Driven sample details.
- Data storage approx. 2000 records
- Data Download through USB in ASCII format.
- User can set break point.
- Store records can be viewed & print.
- Peak stress calculation based on sample type and shape.
- In-built SMPS to ensure constant voltage to digital indicator.
- Easy to operate.
- Password protection for system & calibration setup.
- 2% overload facility to calibrate the machine upto full capacity.
- Start, Stop, Pause & Reset.
- Multifunction Keyboard

System Description

The loading frame has a fully welded construction with a top crosshead, base and solid side walls. The precision ground hydraulic piston is fixed to the base and the machine's platens are hardened, ground, and polished. The upper platen comes with a self-aligning action and suitably sized spacers are also provided as standard to accommodate a variety of different sizes of specimen – the specification table shows which platen set comes with the machine.

The two-speed pump allows the fast approach of the platens for daylight closure, and also allows precise control over the load application using a control lever and valve. A pace rate bar on the display gives operator feedback on the loading rate.

The controller incorporates a digital display, with values of force and stress in English/Imperial, metric, or SI units. and features the integral load pacing bar display in kN/sec or lbf/sec. Maximum load is held and retained for approximately 15 minutes, unless cancelled, using the panel mounted reset switch. Results from approx. 2000 complete runs/tests can be stored in the memory and logged data can be printed directly via the built-in parallel port. The calibrated operating range of the machines is between 10% to 100% of the machine capacity, over which range the accuracy is +/- 1% of the applied load.

Digital Compression Testing Machines

Capacity	Models	Specs of Load Measuring Device (Digital)		General Specifications					
	CTM DG	Digital Indicator		Minimum Clearance Between Platens	Minimum Distance Between Side Plates	Platen Size	Piston Dia	Piston Stroke	Specimen Size
	Cat. No.								
(kN)		Range(kN)	L.C.(kN)		(mm)	(mm)	(mm)	(mm)	
50	302E-DG-1	50	0.002	415	260	140 Square	53	50	50.0mm & 70.6mm Cube
100	305E-DG-1	100	0.01	390	260	140 Square	78.7	50	50.0mm & 70.6mm Cube
250	308E-DG-1	250	0.01	390	260	140 Square	78.7	50	50.0mm, 70.6mm& 100mm Cube
500	311E-DG-1	500	0.02	435	260	140 Square	111.2	50	50.0mm, 70.6mm& 100mm Cube
1000	314E-DG-1	1000	0.1	390	260	222.0 Dia	157	50	100mm & 150mm Cube, 100mm & 150mm Dia Cylinder
2000	317E-DG-1	2000	0.1	370	340	222.0 Dia	222.2	50	100mm & 150mm Cube, 100mm & 150mm Dia Cylinder
3000	320E-DG-1	3000	0.1	400	400	320 Square	272.2	50	150mm to 300mm Cube & 300mm Dia X300mm High Cylinder

NOTE :
- **Electrical Specifications :** Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply. Three phase unit if required must be separately mentioned in your order for the required capacity.
- **Brick Platens :** Appropriate brick platens can be provided at extra cost.
- **Spacers :** Set of spacers to suit specimen sizes mentioned against each model is supplied alongwith the machine
- Machines of higher capacities can be manufactured as per customer requirements.
- Machines are supplied with an NABL accredited calibration certificate.
- Can be connected with printer DOT Matrix printer - EPSON LQ-50 (optional)

Ordering Information :	
AIM 302E-DG-1	Digital Compression Testing Machine, Capacity 50kN
AIM 305E-DG-1	Digital Compression Testing Machine, Capacity 100kN
AIM 308E-DG-1	Digital Compression Testing Machine, Capacity 250kN
AIM 311E-DG-1	Digital Compression Testing Machine, Capacity 500kN
AIM 314E-DG-1	Digital Compression Testing Machine, Capacity 1000kN
AIM 317E-DG-1	Digital Compression Testing Machine, Capacity 2000kN
AIM 320E-DG-1	Digital Compression Testing Machine, Capacity 3000kN
Optional Accessories:	
AIM 33204	Flexure Test Attachment, 100kN Capacity for Digital CTM
AIM 31733	Split Cylinder Tensile Test attachment for 150mm Cube & 150mm dia x 300mm long cylinder to be used in DCTM 2000kN along with brick platen 320 x 220mm
AIM 32033	Split Cylinder Tensile Test attachment for 150mm Cube & 150mm dia x 300mm long cylinder to be used in DCTM 3000kN

Micro Controller Based Compression Testing Machine with Automatic Pace Rate Controller

AIM 302E-MU-1, AIM 305E-MU-1, AIM 308E-MU-1, AIM 311E-MU-1, AIM 314E-MU-1, AIM 317E-MU-1, AIM 320E-MU-1 & AIM 320E-MU 5000
AIM 302E-MU-2, AIM 305E-MU-2, AIM 308E-MU-2, AIM 311E-MU-2, AIM 314E-MU-2, AIM 317E-MU-2, AIM 320E-MU-2 & AIM 320E-MU 5000-2

Operation of a Micro Controller based Compression Testing Machine is controlled by an intelligent Pace Rate Controller. This facilitates Automatic Pace Rate Control, Data Logging, Data Printing, Load Hold etc. It has a full 3 term PID feed back control which uses a high torque Stepper Motor.

It consists of a Loading Unit, an Electrically Operated Hydraulic Pump & an Intelligent Pace Rate Controller.

Micro Controller based Compression Testing Machine is available in all models from 50kN to 5000kN capacity. In addition to all the features of Compression Testing Machine with digital display, this machine has automatic pace rate control with the facility of data logging, storage & printing for analysis. The operation of the machine is detailed in the operating manual supplied with the machine. The operation is user friendly with a menu driven interface and prompts for an operator.

Key Features

- Meets the Exceeds specifications of IS 14858 (2000), Machines Conforming to ASTM C-39, AASHTO T-22,BS, EN and other ASTM standards can be supplied on request.
- Automatic Pace Rate Control at a preset value.
- Pace deviation bar graph.
- Automatic stress determination and display.
- Overload safety protection.
- Self aligning platen with fast accessory change capability.

AIM 317E-MU-1

- Configurable Engineering Unit for machine selection.
- Predefined Machine capacities for each engineering unit. Specific capacity can be selected from the drop down menu.
- Flexible Calibration Points. Calibration can be done on 5 to 10 points.
- Peak Load, Peak Stress, Unique Record No. is displayed.
- In addition to compression, EDI has provision to configure more than one mode such as Flexure, Prism testing & Tensile Splitting strength. Each mode will have independent calibration points & calibration points are also flexible.
- Menu Driven sample details.
- Data storage approx 2000 records.
- In-built SMPS to ensure constant voltage to digital indicator.
- Data Download through USB in ASCII format.
- User can set break point.
- Store records can be viewed & print.
- Peak stress calculation based on sample type and shape.
- Easy to operate.
- Password protection for system & calibration setup.
- 2% overload facility to calibrate the machine upto full capacity.
- Start, Stop, Pause & Reset.
- Multifunction Keyboard
- Over travel safety protection in 1000, 2000 & 3000 kN CTM

System Description

The loading frame has a fully welded construction with a top crosshead, base, and solid side walls with the precision ground hydraulic piston fixed to the base. The machine's platens are hardened, ground, and polished; the upper platen comes with a self-aligning action and suitably sized spacers to accommodate a variety of different sizes of specimen - the specification table shows which platen set comes with the machine.
The two speed pump allows the fast approach of the platens, for daylight closure, and also allows the automatic, precise control over the load application; a pace rate bar on the display gives operator feedback on the loading rate.

The controller incorporates a four line digital display and features the integral load pacing bar display, maximum load and stress result display, parallel port output, and USB output. Results from approximately 2000 completed tests can be stored in the memory and these results can be in Imperial/English, Metric, or SI units. The calibrated operating range of the machines is from 10% to 100% of the machine capacity, over which range the accuracy is +/- 1% of the applied load.

Ordering Information :	
AIM 302E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 50kN
302E-Mu-1EM	Mu Compression Testing Machine, Electromechanical with Automatic Pace Rate Controller, Capacity 50 kN
AIM 305E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 100kN
AIM 308E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 250kN
AIM 311E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 500kN Supplied with BIS Certification Mark, IS:14858
AIM 314E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 1000kN
AIM 317E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 2000kN
AIM 320E-MU-1	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 3000kN
AIM 320E-MU 5000	Mu Compression Testing Machine with Automatic Pace Rate Controller, Capacity 5000kN
AIM 302E-Mu-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 50kN
AIM 302E-Mu-2EM	Mu Compression Testing Machine Electromechanical with Aimi Software, Capacity 50kN
AIM 305E-MU-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 100kN
AIM 308E-MU-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 250kN
AIM 308E-MU-2-D	Microprocessor Compression & Flexure Testing machine for 250kN & 25kN Capacity, Dual mode with Aimil Software,
AIM 311E-MU-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 500kN
AIM 314E-MU-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 1000kN
AIM 317E-MU-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 2000kN
AIM 320E-MU-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 3000kN
AIM 320E-MU-5000-2	Mu Compression Testing Machine with Automatic Pace Rate Controller & Aimil Software, Capacity 5000kN ,Compact model.
Optional Accessories:	
AIM 33203	Flexure Test Attachment, 100kN Capacity for Mu CTM
AIM 33203-2	Flexure Test Attachment with software, 100kN Capacity for Mu CTM

Mu Compression Testing Machines (with Automatic Pace Rate Control)

Capacity	Models	Specs of Load Measuring Device (Digital)		General Specifications					
	CTM Mu	Digital Indicator		Minimum Clearance Between Platens	Max Horizontal Clearance	Platen Size	Piston Dia	Piston Stroke	Specimen Size
	Cat. No.								
(kN)		Range(kN)	L.C.(kN)	(mm)	(mm)	(mm)	(mm)	(mm)	
50	302E-Mu-1	50	0.002	415	260	140 Square	53	50	50.0mm & 70.6mm Cube
50	302E-Mu-1EM (2 Pillar Type)	50	0.001	450	364	140 Square	-	86	50.0mm & 70.6mm Cube
100	305E-Mu-1	100	0.01	390	260	140 Square	78.7	50	50.0mm & 70.6mm Cube
250	308E-Mu-1	250	0.01	390	260	140 Square	78.7	50	50.0mm, 70.6mm& 100mm Cube
500	311E-Mu-1	500	0.02	435	260	140 Square	111.2	50	50.0mm, 70.6mm& 100mm Cube
1000	314E-Mu-1	1000	0.1	390	260	222.0 Dia	157	50	100mm & 150mm Cube, 100mm & 150mm Dia Cylinder
2000	317E-Mu-1	2000	0.1	370	340	222.0 Dia	222.2	50	100mm & 150mm Cube, 100mm & 150mm Dia Cylinder
3000	320E-Mu-1	3000	0.1	400	400	320 Square	272.2	50	150mm to 300mm Cube & 300mm Dia X300mm High Cylinder
5000	320E-MU-5000	5000	0.2	620	600	320 Square	341	50	150 mm to 500 mm Cube & 150 mm x 300 mm Cylinder to 500 mm x 1000 mm Cylinder

NOTE :

- **Electrical Specifications:** Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply. Three phase unit if required must be separately mentioned in your order for the required capacity.
- **Brick Platens:** Appropriate brick platens can be provided at extra cost.
- **Spacers:** Set of spacers to suit specimen sizes mentioned against each model is supplied alongwith the machine.
- Machines of higher capacities can be manufactured as per customer requirements.
- Machines are supplied with an NABL accredited calibration certificate.
- Can be connected with printer DOT Matrix printer - EPSON LQ-50 (optional)

Automatic Compression Testing Machine with Aimil Software

AIM 302E-FA-2, AIM 302E-FA-2EM, AIM 305E-FA-2, AIM 308E-FA-2, AIM 311E-FA-2
AIM 314E-FA-2, AIM 317E-FA-2, AIM 320E-FA-2 & AIM 320E-FA-5000-2
AIM 302E-FA-4, AIM 302E-FA-4EM, AIM 305E-FA-4, AIM 308E-FA-4, AIM 311E-FA-4
AIM 314E-FA-4, AIM 317E-FA-4, AIM 320E-FA-4 & AIM 320E-FA-5000-4

Key Features

General

- Conforms to IS 516 and IS : 14858
- Machines conforming to ASTM C39, AASHTO T22, BS, EN and other ASTM standards can be supplied on request.
- "CE" certification on request.
- Fully Auto Controlled – Operable with EDI through
  • Laptop • Desktop P.C • Standalone EDI

Minimum Recommended Computer Hardware

- 2 GHz Pentium Dual Core or better
- 4 GB RAM
- Using multiple testing machines may require additional memory and/or a faster processor
- 512 MB DirectX 10.0 capable video card or better
- 500 GB HD Drive
- RS232 Serial Port
  - 1 integrated serial port (not USB) where possible per testing machine
  - If RS232 serial port unavailable, then 1 USB serial port with RS232/USB adapter is required (per machine)
- USB Port
  - Additional ports required if using RS232/USB adapters to communicate with machines
  - Additional ports for required measuring devices, barcode scanners, etc.
- Mouse or pointing device and keyboard supported by Windows
- Monitor
  - 32-bit color
  - 1600 x 900 (Widescreen) or higher
- Windows compatible printer (for reporting capabilities)
- Windows compatible sound card and speakers (for audio playback)
- An active Internet connection (for team viewer use and help desk support)

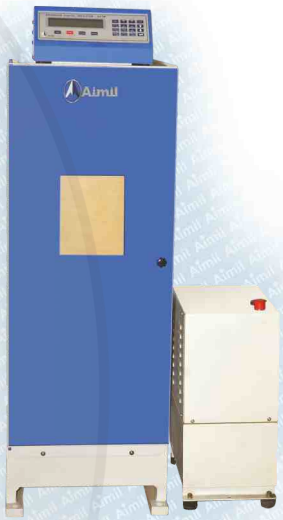
Software Requirements

- The Aimil Software's are designed for 32-bit & 64-bit operating systems running Windows 7, Windows 8 or Window 10. It does Not support Windows XP and below.
- Internet Explorer 8 or higher.

Note: A 64-bit operating system is preferred for best Performance

Software Requirements

- The Aimil Software is designed for 32-bit & 64-bit operating systems running **Windows 7, Windows 8 or Windows 10.** It does Not support Windows XP and below.



AIM 317E-FA-2

AIM 317E-FA-4

- Internet Explorer 8 or higher.
  Note: A 64-bit operating system is preferred for best Performance.

Aimil Scope of Supply of Software include :

- Aimil Software
- USB Cable

Enhanced Digital Indicator (EDI)

- Configurable Engineering Unit for machine selection.
- Predefined Machine capacities for each engineering unit. Specific capacity can be selected from the drop down menu.
- Flexible Calibration Points. Calibration can be done on 5 to 10 points.
- Peak Load, Peak Stress, Unique Record No. is displayed.
- In addition to compression, EDI has provision to configure more than one mode such as Flexure, Prism testing & Tensile Splitting strength. Each mode will have independent calibration points & calibration points are also flexible.
- Mode-4 runs with Mode-1 calibration.
- Dynamic Calibration
- Any Centronics dot matrix Printer.
- Menu Driven sample details.
- Data storage approx 2000 records.
- Data Download through USB in ASCII format.
- User can set break point.
- Store records can be viewed & print.
- Peak stress calculation based on sample type and shape.
- Easy to operate.
- Password protection for system & calibration setup.
- 2% overload facility to calibrate the machine upto full capacity.
- Start, Stop, Pause & Reset.
- Multifunction Keyboard.
- Automatic Pace rate control to set value
- Auto close / release of Dump Valve.
- Communication with Aimil thru USB
- Machine can be operated with software through computer

Aimil ACTM is a fully automated version of the manual/ semiautomatic Compression testing Machine. The Machine is available from 50kN to 5000kN range. Machine can be operated as a standalone with EDI as well as with Aimil software installed in a Desktop PC or Laptop. When Machine is operated with software then all operation relating to machine control and functioning is done through Aimil Software only. EDI controls the machine and gives the appropriate command based on requirements. The load resolution varies from 0.002kN – 0.2kN based on Machine Capacity.

Compression Testing Machine

Aimil Series of Compression Testing Machines are the finest of their types available. The rugged construction and extreme simplicity makes it possible for personnel with minimum Training to operate them with ease and complete dependability.

Automatic Compression Testing Machine

Aimil Fully Automatic Compression Testing Machine is a fully automated version of the manual/semi automatic Compression testing Machine. The Machine is available in 50kN to 5000kN ranges. It has provision for automatically turning the pump on and off, controlling the set pace rate and switching the machine off under predetermined conditions. The Control releases the pressure at the end of every run and reinitializes the machine at the beginning of every test. The pace rate is maintained by means of full three term PID feedback control using high torque stepper motors and driver sets. Data acquisition, storage, management and analysis are all fully automated.

The complete unit comprises of :

Loading Unit :

The Loading unit is of fully welded construction having a cross head, base and solid side plates. A 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

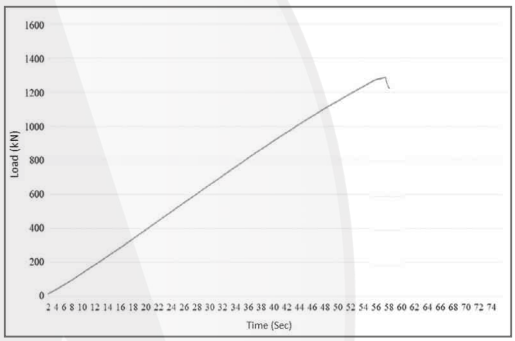
This has a 0.5 hp, 1 Ph, 220V AC motor driven two-speed hydraulic pump and a bonded strain gauge based Pressure transducer.

Electronic Hardware

- The compression testing machine is fully controlled by IBM or IBM compatible personal computer running under Microsoft Windows operating System.
- The Pump control is facilitated thru PID controlled EDI. EDI is connected to PC thru Serial Port 232 or any converter using serial to USB if serial port is not available. **(Caution : Use only original FTDI part no. FS-U-1001-R10 or US232R-10 under Farnell Part no.1615-838)**
- Displacement Measuring device interface is available for Strain measurements (Optional)

Machine hardware is easily configurable through software, making the field upgradation easy i.e., a Standard Compression machine can easily be upgraded to Compression plus flexure or Compression plus Flexure plus Split Tensile or for that matter two Compression frames of different Capacities.

- An intuitive and easy to use Graphical User Interface
- Login and Access control
- Online help file
- Multiple calibration files for different machine configuration.
- Least count of 0.002kN – 0.2kN based on machine capacities.

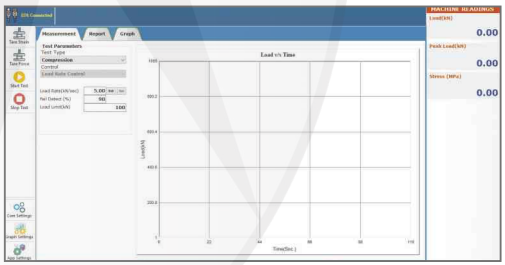


Load vs Time

The software also provides below Functions to the Operator

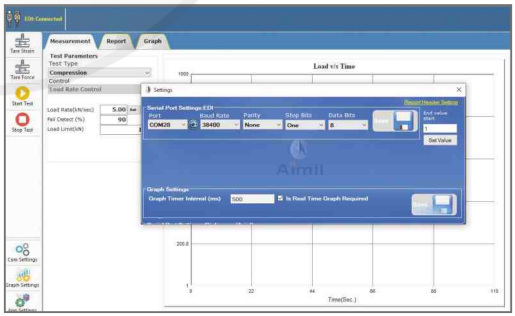
Software:

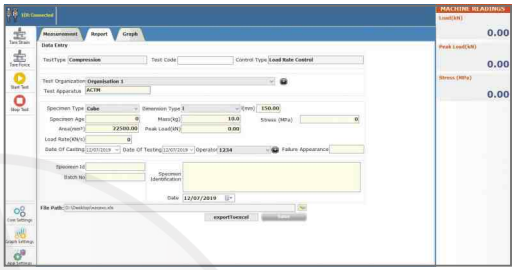
Aimil recognize that the most efficient way to testing way of testing is with the help of software and the ease of its operation. The Aimil Test Software has been ergonomically designed to suit the various needs of the customers as per their requirements and operation of the software is extremely user friendly and the features are self-explanatory



Features:

- Compression Test
- Flexure Test
- Compression with Axial & Lateral Test
- Compression with strain gauges indicator attachment
- Scale setting facility for graph of Load, Stress, Time, Axial expression, Axial strain, Lateral expansion, Lateral strain, Strain.
- Show all graph along with related data.
- Graph available with us: Load Vs Time, Load Vs stress, Stress Vs Time, Axial strain Vs Lateral Strain, Axial expression Vs Lateral Expansion (configurable).
- Database backup and restore facilities are available.
- The default report is generated automatically, in crystal reports and can be printed directly. The report can be exported to Excel and PDF format.





- It provides the data acquisition in real time throughout the test execution up to the specimen failure.
- Drop down selection of specimen type Cube, Cylinder, Brick, Area.

Data Storage:

- Captured data will be stored in database securely
- User can get/generate report any time
- Auto backup database
- Import data from backup data file. (according to requirement)
- Generate PDF report from stored data.
- The advanced functions for data base management provide an easy navigation of all saved data.

Test Screen:

The enhanced display of the test screen displays the value of the Load, Peak Load, Stress, axial expression, lateral expansion and the online graph as it is generated during tests. The selection of the scale on graph enables you to view the graph more prominently on the screen. The test screen incorporates the results of the normal Load Vs Time, Stress Vs Time, Axial strain vs Lateral expansion (configurable) online graphical view simultaneously, a unique facility on its own.

Minimum Recommended Computer Hardware

- 2 GHz Pentium Dual Core or equivalent
- 4 GB RAM, although using multiple testing machines may require addition memory or/and a faster processor
- 32- or 64-bit operating system type.
- 500 GB HD Drive
- Mouse or pointing device and keyboard supported by windows
- Monitor that support at least 1024 x 768 resolution.
- Min. 2 USB Serial Port
- Window compatible printer recommended for reporting capabilities

Strain Measurement with the Automatic Testing Machine

In addition to measuring the stress on the specimen, a version of the machine is also available with the option of measuring the strain on the sample. This is achieved by installing displacement measuring device including compressometer to measure the compression and extensometer to measure lateral expansion of the sample from which the strains can be calculated. With this option, the software features of the Automatic Compression Testing Machine are expanded to include the following:

- Compression Vs Time Plot.
- Axial Strain Vs Time Plot.
- Stress Vs Axial Strain Plot.
- Calculation of Young's Modulus of the sample.
- Lateral Strain Vs Time Plot.
- Calculation of Poisson's Ratio

It has the facility to list load, compression, stress, Axial strain, lateral strain & time on a single table.

Flexural Strength Measurement with Digital Microprocessor Controlled Automatic Compression Testing Machine

In addition to compressive strength an attachment for measuring Flexural strength of beam can also be supplied at an extra cost. This is accomplished by providing a frame for testing flexural strength along with the dedicated software which can be used as an attachment to the existing system. The software features of flexure attachment include the provision for calibration.

Split Tensile Strength Measurement for Cylindrical & Cubical samples

In addition to compression strength attachments for Split Tensile Strength Test of Cylindrical & Cubical samples can be supplied at extra cost. This is accomplished by providing attachments which can be mounted on the Compression Testing Frame for Split Tensile Strength Test. The software features of Split Tensile Strength attachment include the provision for calibration.

Ordering Information :	
AIM 302E-FA-2	Automatic Compression Testing Machine Capacity 50kN, with Aimil software & without computer
AIM 302E-FA-4	Automatic Compression Testing Machine Capacity 50kN, with Aimil software & with computer
AIM 302E-FA-2EM	Automatic Compression Testing Machine, Electromechanical, Capacity 50 kN with Aimil software & without computer
AIM 302E-FA-4EM	Automatic Compression Testing Machine, Electromechanical, Capacity 50 kN with Aimil software & with computer
AIM 305E-FA-2	Automatic Compression Testing Machine Capacity 100kN, with Aimil software & without computer
AIM 305E-FA-4	Automatic Compression Testing Machine Capacity 100kN, with Aimil software & with computer
AIM 308E-FA-2	Automatic Compression Testing Machine, Capacity 250kN with Aimil software & without computer
AIM 308E-FA-4	Automatic Compression Testing Machine, Capacity 250kN with Aimil software & with computer
AIM 311E-FA-2	Automatic Compression Testing Machine, Capacity 500kN with Aimil software & without computer
AIM 311E-FA-4	Automatic Compression Testing Machine, Capacity 500kN with Aimil software & with computer
AIM 314E-FA-2	Automatic Compression Testing Machine, Capacity 1000kN with Aimil software & without computer
AIM 314E-FA-4	Automatic Compression Testing Machine, Capacity 1000kN with Aimil software & with computer
AIM 317E-FA-2	Automatic Compression Testing Machine, Capacity 2000kN with Aimil software & without computer
AIM 317E-FA-4	Automatic Compression Testing Machine, Capacity 2000kN with Aimil software & with computer
AIM 320E-FA-2	Automatic Compression Testing Machine, Capacity 3000kN with Aimil software & without computer
AIM 320E-FA-4	Automatic Compression Testing Machine, Capacity 3000kN with Aimil software & with computer
AIM 320E-FA-5000-2	Automatic Compression Testing Machine, Capacity 5000kN- Compact with Aimil software & without computer
AIM 320E-FA-5000-4	Automatic Compression Testing Machine, Capacity 5000kN- Compact with Aimil software & with computer
Optional Accessories :	
AIM 31727-1	Axial Strain Measuring attachment with software for 150mm dia x 300 mm long sample
AIM 31727-2	Lateral Strain Measuring attachment with software for 150mm dia x 300 mm long sample
AIM 31727-3	Axial & Lateral Strain Measuring attachment with software for 150mm dia x 300 mm long sample
AIM 31728	Split Tensile test attachment with software for 150mm Cube & 150mm dia X 300mm long cylinder to be used in ACTM 2000kN
AIM 32028	Split Tensile test attachment with software for 150mm Cube & 150mm dia X 300mm long cylinder to be used in ACTM 3000kN
AIM 33202	Flexure Test Attachment, 100kN Capacity for ACTM with software

Automatic Compression Testing Machines (with Aimil Software)

	Model	Specs of Load Measuring Device		General Specifications					
Capacity	ACTM FA			Maximum Clearance between Platens	Maximum Distance between Side Plates	Platen Size	Piston Diameter	Piston Stroke	Specimen Size
kN	CAT No.	Range	Resolution(kN)	mm	mm	mm	mm	mm	
50	302E-FA-2	50	0.002	415	360	140 Square	53	50	50.0 mm & 70.6 mm Cube
50	302E-FA-2EM (2 Pillar Type)	50	0.001	450	364	140 Square	-	86	50.0 mm & 70.6 mm Cube
100	305E-FA-2	100	0.01	390	260	140 Square	78.7	50	50.0 mm & 70.6 mm Cube
250	308E-FA-2	250	0.01	390	260	140 Square	78.7	50	50.0 mm, 70.6 mm & 100 mm Cube
500	311E-FA-2	500	0.02	435	260	140 Square	111.2	50	50.0 mm, 70.6 mm & 100 mm Cube
1000	314E-FA-2	1000	0.1	390	260	222.2 Dia	157.0	50	100 mm , 150 mm Cube & 100 mm, 150 mm Dia Cylinder
2000	317E-FA-2	2000	0.1	370	340	222.2 Dia	222.20	50	100 mm, 150 mm Cube & 100 mm, 150 mm Dia Cylinder
3000	320E-FA-2	3000	0.1	400	400	320 Square	272.2	50	150 mm to 300 mm Cube & 300 mm Dia x 300 mm High Cylinder
*5000	320E-FA-5000-2	5000	0.2	620	600	320 Square	341	50	150 mm to 500 mm Cube & 150 mm x 300 mm Cylinder to 500 mm x 1000 mm Cylinder

Note:

- **Electrical Specifications:** Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply. Three phase unit if required must be separately mentioned in your order for the required capacity.
- **Brick Platens:** Appropriate brick platens can be provided at extra cost.
- **Spacers :** Set of spacers to suit specimen sizes mentioned against each model is supplied alongwith the machine
- Machines are supplied with an NABL accredited calibration certificate.
- Machines of higher capacities can be manufactured as per customer requirements.
- *Calibration is done against Proving Ring upto 3000kN only. Reading are extrapolated above 3000kN (up to 5000kN)

Automatic Compression Testing Machines with Aimil Software & Computer

	Model	Specs of Load Measuring Device		General Specifications					
Capacity	ACTM FA			Maximum Clearance between Platens	Maximum Distance between Side Plates	Platen Size	Piston Diameter	Piston Stroke	Specimen Size
kN	CAT No.	Range	Resolution(kN)	mm	mm	mm	mm	mm	
50	302E-FA-4	50	0.002	415	360	140 Square	53	50	50.0 mm & 70.6 mm Cube
50	302E-FA-2EM (2 Pillar Type)	50	0.001	450	364	140 Square	-	86	50.0 mm & 70.6 mm Cube
100	305E-FA-4	100	0.01	390	260	140 Square	78.7	50	50.0 mm & 70.6 mm Cube
250	308E-FA-4	250	0.01	390	260	140 Square	78.7	50	50.0 mm, 70.6 mm & 100 mm Cube
500	311E-FA-4	500	0.02	435	260	140 Square	111.2	50	50.0 mm, 70.6 mm & 100 mm Cube
1000	314E-FA-4	1000	0.1	390	260	222.2 Dia	157.0	50	100 mm , 150 mm Cube & 100 mm, 150 mm Dia Cylinder
2000	317E-FA-4	2000	0.1	370	340	222.2 Dia	222.20	50	100 mm, 150 mm Cube & 100 mm, 150 mm Dia Cylinder
3000	320E-FA-4	3000	0.1	400	400	320 Square	272.2	50	150 mm to 300 mm Cube & 300 mm Dia x 300 mm High Cylinder
*5000	320E-FA-5000-4	5000	0.2	620	600	320 Square	341	50	150 mm to 500 mm Cube & 150 mm x 300 mm Cylinder to 500 mm x 1000 mm Cylinder

Note:

- **Electrical Specifications:** Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply. Three phase unit if required must be separately mentioned in your order for the required capacity.
- **Brick Platens:** Appropriate brick platens can be provided at extra cost.
- **Spacers :** Set of spacers to suit specimen sizes mentioned against each model is supplied alongwith the machine
- Machines of higher capacities can be manufactured as per customer requirements.
- Machines are supplied with an NABL accredited calibration certificate.
- *Calibration is done against Proving Ring upto 3000kN only. Reading are extrapolated above 3000kN (up to 5000kN)

Micro Controller Based Compression Testing Machine - Servo (Load) Controlled

AIM 302E-MU-3, AIM 305E-MU-3, AIM 308E-MU-3, AIM 311E-MU-3, AIM 314E-MU-3, AIM 317E-MU-3, AIM 320E-MU-3 & AIM 320E-MU-5000-3
AIM 302E-MU-4, AIM 305E-MU-4, AIM 308E-MU-4, AIM 311E-MU-4, AIM 314E-MU-4, AIM 317E-MU-4, AIM 320E-MU-4 & AIM 320E-MU-5000-4

Compliance with Following International Standards:
IS: 560, ASTM C39, IS: 14858 (2000)

Experience the epitome of precision and control with our Servo Controlled Compression Testing Machine. Operated by an intelligent Pace Rate Controller, this machine offers a host of features to streamline your testing process and ensure accurate results.

Key Features:

Controller: The intelligent Controller enables automatic pace rate control, data logging, data printing, and load hold functionalities, ensuring consistent and reliable testing parameters.

Advanced Control Features: The machine automatically controls the pump, adjusts pace rates, and initiates shutdown under predetermined conditions, optimizing workflow and minimizing manual intervention.

PID Feedback Control: With full three-term PID feedback control using servo motors and driver sets, the machine maintains precise pace rates for accurate and repeatable testing.

Silent Hydraulic Pump: Our machine features a silent hydraulic pump, providing a quieter work environment without compromising performance.

System Description:

Loading Unit: The Loading Unit of a compression testing machine, featuring an oil-filled ball socket, piston, and cylinder assembly, embodies precision and reliability in concrete testing. The integration of an oil-filled ball socket ensures frictionless movement, guaranteeing accurate force transmission essential for dependable compression testing results. This combination of components facilitates uniform force distribution across test specimens, minimizing stress concentrations and ensuring consistent material characterization. Operators benefit from adjustable compression parameters, enabling customization according to specific testing standards or protocols. Safety mechanisms, including over travel protection prioritize operator safety and prevent equipment damage during testing procedures.

Servo Motor Operated Hydraulic Pump: A servo motor-controlled hydraulic pump integrated into a compression testing machine provides precise and dynamic force control during testing operations. By combining the accuracy of servo motor technology with the power of hydraulic systems, this feature ensures consistent and reliable compression testing across various materials and sample types. The servo motor allows for real-time adjustments to the hydraulic pressure, enabling precise control over the compression force applied to specimens. This capability ensures repeatable results and accommodates complex testing requirements. Moreover, the servo motor-controlled hydraulic pump enhances safety by offering overload protection and emergency stop functionalities, thereby safeguarding both the equipment and operators during testing procedures. Overall, this feature optimizes the performance, accuracy, and safety of compression testing machines.

Electronic controller with Touch display: This is the touch screen EDI & features the integral load pacing bar display, live pace rate display, maximum load & stress result display, USB output & also Wi-Fi

enabled. Results from approximately 2000 completed tests can be stored in the memory & these results can be in Imperial/English, Metric of SI units. These results can further be downloaded to PC through USB.

Precision Platens: Hardened, ground, and polished platens ensure accurate and reliable testing, with a self-aligning action and suitably sized spacers to accommodate various specimen sizes.

Additional Features:

- Exceeds specifications of IS: 516 & IS: 14858 (2000)
- Heavier frame for increased stiffness and improved aesthetics
- Servo motor powered pump for daylight closure
- Noiseless operation
- Oil-filled ball seating with heavy-duty upper platen for stability
- High degree of control throughout the testing process
- Door closed safety feature
- Over piston travel protection
- 10.1 inch TFT LED backlit display, Resolution: 800x480 (RGB)
- Unique storage options: internal memory, USB, and Wi-Fi-based cloud storage
- Real-time display of load Vs. time graph
- Wi-Fi enabled for data transfer and standalone operation (optional)
- Automatic pace rate control and stress determination
- Overload safety protection
- Configurable engineering unit selection

Flexural Strength Measurement with Micro Controller Compression Testing Machine - Servo Controlled

In addition to compressive strength an attachment for measuring Flexural strength of beam can also be supplied at an extra cost. This is accomplished by providing a frame for testing flexural strength along with the dedicated software which can be used as an attachment to the existing system.

Split Tensile Strength Measurement for Cylindrical & Cubical samples

In addition to compression strength attachments for Split Tensile Strength Test of Cylindrical & Cubical samples can be supplied at extra cost. This is accomplished by providing attachments which can be mounted on the Compression Testing Frame for Split Tensile Strength Test.

Ordering Information :	
AIM 302E-Mu-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 50kN
AIM 305E-MU-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 100kN
AIM 308E-MU-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 250kN
AIM 311E-MU-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 500kN
AIM 314E-MU-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 1000kN
AIM 317E-MU-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 2000kN
AIM 320E-MU-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 3000kN
AIM 320E-MU-5000-3	Mu Compression Testing Machine, Servo-Controlled, Capacity 5000kN
AIM 302E-Mu-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 50kN
AIM 305E-Mu-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 100kN
AIM 308E-Mu-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 250kN
AIM 311E-MU-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 500kN
AIM 314E-MU-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 1000kN
AIM 317E-MU-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 2000kN
AIM 320E-MU-4	Mu Compression Testing Machine, Servo-Controlled with Aimil Software, Capacity 3000kN
AIM 320E-MU-5000-4	Mu Compression Testing Machine, Servo-Controlled, Capacity 5000kN

Micro Controller Based Compression Testing Machine with Automatic Pace Rate Controller - Servo Controlled

General Specifications									
Capacity		Specs of Load Measuring Device		Maximum Clearance between Platens	Maximum Distance between Side Plates	Platen Size	Piston Diameter	Piston Stroke	Specimen Size
kN	CAT No. AIM	Range	Resolution(kN)	mm	mm	mm	mm	mm	
50	302E-Mu-3	50	0.002	390	260	140 Square	53	50	50.0 mm & 70.6 mm Cube
100	305E-Mu-3	100	0.01	390	260	140 Square	78.7	50	50.0 mm & 70.6 mm Cube
250	308E-Mu-3	250	0.01	390	260	140 Square	78.7	50	50.0 mm, 70.6 mm & 100 mm Cube
500	311E-Mu-3	500	0.01	380	260	230 Round	157.0	50	50.0 mm, 70.6 mm & 100 mm Cube
1000	314E-Mu-3	1000	0.1	380	260	230 Round	157.0	50	100 mm, 150 mm Cube & 100 mm, 150 mm Dia Cylinder
2000	317E-Mu-3	2000	0.1	380	360	Upper-300 Round Lower-200 Square	222.2	50	100 mm , 150 mm Cube & 100 mm, 150 mm Dia Cylinder
3000	320E-Mu-3	3000	0.1	410	400	Upper-300 Round Lower-200 Square	272.2	50	150 mm to 300 mm Cube & 300 mm Dia x 300 mm High Cylinder
5000	320E-Mu-5000-3	5000	0.2	580	600	350 Square	341	50	150 mm to 300 mm Cube & 150 mm x 300 mm Cylinder to 300 mm x 600 mm Cylinder

Note:

- Electrical Specifications: Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply.
- Brick Platens: Appropriate brick platens can be provided at extra cost.
- Spacers: Set of spacers to suit specimen sizes mentioned against each model is supplied along with the machine
- Machines are supplied with an NABL accredited calibration certificate.
- Machines of higher capacities can be manufactured as per customer requirements.

Fully Automatic Compression Testing Machine - Servo Controlled, with load control facility

AIM 302E-FA-3, AIM 305E-FA-3, AIM 308E-FA-3, AIM 311E-FA-3, AIM 314E-FA-3, AIM 317E-FA-3, AIM 320E-FA-3 & AIM 320E-FA-5000-3

AIM 302E-FA-5, AIM 305E-FA-5, AIM 308E-FA-5, AIM 311E-FA-5, AIM 314E-FA-5, AIM 317E-FA-5, AIM 320E-FA-5 & AIM 320E-FA-5000-5

Compliance with Following Standards:

IS 560, IS 14858 : 2000

Experience the epitome of precision and control with our Servo Controlled Compression Testing Machine. Operated by an intelligent Pace Rate Controller, this machine offers a host of features to streamline your testing process and ensure accurate results.

AIM 317E-FA-3

Key Features:

Controller: The intelligent Controller enables automatic pace rate control, data logging, data printing, and load hold functionalities, ensuring consistent and reliable testing parameters.

Advanced Control Features: The machine automatically controls the pump, adjusts pace rates, and initiates shutdown under predetermined conditions, optimizing workflow and minimizing manual intervention.

Pressure Release and Initialization: At the end of each run, the control system releases pressure and reinitializes the machine for the next test, ensuring seamless operation and consistent results.

PID Feedback Control: With full three-term PID feedback control using servo motors and driver sets, the machine maintains precise pace rates for accurate and repeatable testing.

Automated Data Management: Data acquisition, storage, management, and analysis are fully automated, enhancing productivity and enabling comprehensive analysis of test results.

Silent Hydraulic Pump: Our machine features a silent hydraulic pump, providing a quieter work environment without compromising performance.

System Description:

Loading Unit: The Loading Unit of a compression testing machine, featuring an oil-filled ball socket, piston, and cylinder assembly, embodies precision and reliability in concrete testing. The integration of an oil-filled ball socket ensures frictionless movement, guaranteeing accurate force transmission essential for dependable compression testing results. This combination of components facilitates uniform force distribution across test specimens, minimizing stress concentrations and ensuring consistent material characterization. Operators benefit from adjustable compression parameters, enabling customization according to specific testing standards or protocols. Safety mechanisms, including over travel protection prioritize operator safety and prevent equipment damage during testing procedures.

Servo Motor Operated Hydraulic Pump: A servo motor-controlled hydraulic pump integrated into a compression testing machine provides precise and dynamic force control during testing operations. By combining the accuracy of servo motor technology with the power of hydraulic systems, this feature ensures consistent and reliable compression testing across various materials and sample types. The servo motor allows for real-time adjustments to the hydraulic pressure, enabling precise control over the compression force applied to specimens. This capability ensures repeatable results and accommodates complex testing requirements. Moreover, the servo motor-controlled hydraulic pump enhances safety by offering overload protection and emergency stop functionalities, thereby safeguarding both the equipment and operators during testing procedures. Overall, this feature optimizes the performance, accuracy, and safety of compression testing machines.

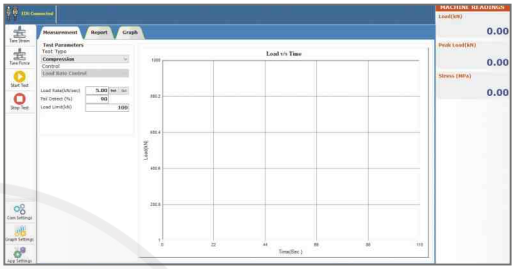
Electronic controller with Touch display: This is the touch screen display & features the integral load pacing bar display, live pace rate display, maximum load & stress result display, USB output & also Wi-Fi enabled. Results from approximately 2000 completed tests can be stored in the memory & these results can be in Imperial/English, Metric of SI units. These results can further be downloaded to PC through USB.

Precision Platens: Hardened, ground, and polished platens ensure accurate and reliable testing, with a self-aligning action and suitably sized spacers to accommodate various specimen sizes.

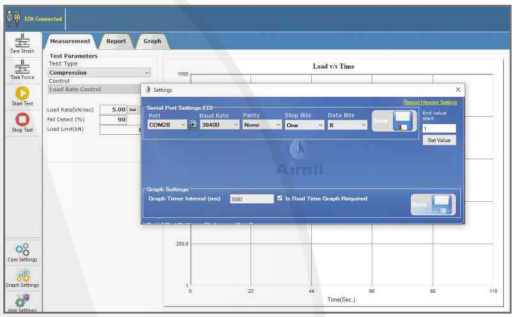
Key Features:

- Exceeds specifications of IS 516 & IS 14858 : 2000
- Fully Automatic operation via Laptop, Desktop, or Standalone Touch Screen Display
- Heavier frame for increased stiffness and improved aesthetics
- Servo motor powered pump for daylight closure
- Noiseless operation
- Oil-filled ball seating with heavy-duty upper platen for stability
- High degree of control throughout the testing process
- Door closed safety feature
- Over piston travel protection
- 10.1 inch TFT LED backlit display, Resolution: 800x480 (RGB)
- Unique storage options: internal memory, USB, and Wi-Fi-based cloud storage
- Real-time display of load Vs. time graph
- Wi-Fi enabled for data transfer and standalone operation (optional)
- Automatic pace rate control and stress determination
- Overload safety protection
- Configurable engineering unit selection
- Integration with Aimil online monitoring software for live monitoring and comprehensive reports (optional)
- Machines are supplied with an NABL accredited calibration certificate.

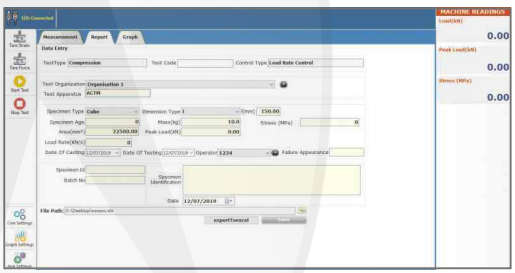
Software Description:
Aimil recognize that the most efficient way to testing way of testing is with the help of software and the ease of its operation. The Aimil Test Software has been ergonomically designed to suit the various needs of the customers as per their requirements and operation of the software is extremely user friendly and the features are self-explanatory



Features:
- Compression Test
- Flexure Test
- Compression with Axial & Lateral Test
- Compression with strain gauges indicator attachment
- Scale setting facility for graph of Load, Stress, Time, Axial expression, Axial strain, Lateral expansion, Lateral strain, Strain.
- Plots - Displacement vs Time, Load vs Time, Load vs Displacement, Stress vs Strain graphs etc.
- Database backup and restore facilities are available.
- The default report is generated automatically, in crystal reports and can be printed directly. The report can be exported to Excel and PDF format.
- It provides the data acquisition in real time throughout the test execution up to the specimen failure.
- Drop down selection of specimen type Cube, Cylinder, Brick, Area.



Data Storage:
- Captured data will be stored in database securely
- User can get/generate report any time
- Auto backup database
- Import data from backup data file. (according to requirement)
- Generate PDF report from stored data.
- The advanced functions for data base management provide an easy navigation of all saved data.



Test Screen:
The enhanced display of the test screen displays the value of the Load, Peak Load, Stress, axial expression, lateral expansion and the online graph as it is generated during tests. The selection of the scale on graph enables you to view the graph more prominently on the screen. The test screen incorporates the results of the normal Load Vs Time, Stress Vs Time, Axial strain vs Lateral expansion (configurable) online graphical view simultaneously, a unique facility on its own.

Minimum Recommended Computer Hardware
- 2 GHz Pentium Dual Core or equivalent
- 4 GB RAM, although using multiple testing machines may require addition memory or/and a faster processor
- 32- or 64-bit operating system type.
- 500 GB HD Drive
- Mouse or pointing device and keyboard supported by windows
- Monitor that support at least 1024 x 768 resolution.
- Min. 2 USB Serial Port
- Window compatible printer recommended for reporting capabilities

Strain Measurement with the Automatic Testing Machine

In addition to measuring the stress on the specimen, a version of the machine is also available with the option of measuring the strain on the sample. This is achieved by installing displacement measuring device including compressometer to measure the compression and extensometer to measure lateral expansion of

the sample from which the strains can be calculated. With this option, the software features of the Automatic Compression Testing Machine are expanded to include the following:

- Compression Vs Time Plot.
- Axial Strain Vs Time Plot.
- Stress Vs Axial Strain Plot.
- Calculation of Young's Modulus of the sample.
- Lateral Strain Vs Time Plot.
- Calculation of Poisson's Ratio

It has the facility to list load, compression, stress, Axial strain, lateral strain & time on a single table.

Flexural Strength Measurement with Digital Microprocessor Controlled Automatic Compression Testing Machine

In addition to compressive strength, an attachment for measuring Flexural strength of beam can also be supplied at an extra cost. This is accomplished by providing a frame for testing flexural strength along with the dedicated software which can be used as an attachment to the existing system.

Split Tensile Strength Measurement for Cylindrical & Cubical samples

In addition to compression strength, attachments for Split Tensile Strength Test of Cylindrical & Cubical samples can be supplied at an extra cost. This is accomplished by providing attachments which can be mounted on the Compression Testing Frame for Split Tensile Strength Test.

Fully Automatic Compression Testing Machine - Servo Controlled with Load Control Facility & DT-85 Data Taker

All specifications are similar to our Fully Automatic Compression Testing Machine Servo Controlled with load controlled facility including software features.

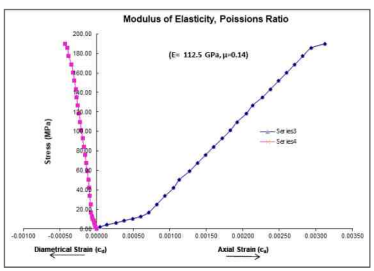
Fully Automatic Compression Testing Machine Servo Controlled with DT-85 Data Logger Module is engineered to deliver accurate and reliable measurements of Young's modulus and Poisson's ratio.

Key Features:

- **Measurement Capability:** Measures Young's modulus and Poisson's ratio of concrete and rock specimens.
- **Versatile Sensor Compatibility:** Supports various sensors like displacement sensors (LVDT) and strain gauges.
- **Precision and Reliability:** Ensures high accuracy in material testing for research and industrial applications.
- **Displaying Channels:** Capable for displaying different parameters in different channels Simultaneously.

DT-85 Data Logger Specifications

- Type: Advanced Data logger
- Display Type: LCD, Backlit, 2 line by 16 characters
- Data Memory: 128 MB
- Battery Type: 6 V Lead Acid
- Channels: 16 to 48 Analog and 12 Digital (expandable using CEM20 modules), high-speed counter inputs, and phase encoder inputs
- Interface: Includes SDI-12, Ethernet, MODBUS, RS232, RS422, RS485, USB
- Sensor Types: Numerous, including thermocouples, thermistors, temperature sensors, strain gauges, and bridge sensors



Note: Displacement Sensors (LVDT) or Strain Gauges Disposal Types are optional accessores.

Ordering Information :	
AIM 302E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 50kN with Aimil software and without computer, with load control facility
AIM 305E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 100kN with Aimil software and without computer, with load control facility
AIM 308E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 250kN with Aimil software and without computer, with load control facility
AIM 311E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 500kN with Aimil software and without computer, with load control facility
AIM 314E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 1000kN with Aimil software and without computer, with load control facility
AIM 317E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 2000kN with Aimil software and without computer, with load control facility
AIM 320E-FA-3	Automatic Compression Testing Machine, Servo Controlled Capacity 3000kN with Aimil software and without computer, with load control facility
AIM 320E-FA-5000-3	Automatic Compression Testing Machine, Servo Controlled Capacity 5000kN with Aimil software and without computer, with load control facility
AIM 302E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 50kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
AIM 305E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 100kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
308E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 250kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
AIM 311E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 500kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
AIM 314E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 1000kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
AIM 317E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 2000kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
AIM 320E-FA-5	Automatic Compression Testing Machine, Servo Controlled Capacity 3000kN with Aimil software and DT-85 Data Taker, without computer, with load control facility
AIM 320E-FA-5000-5	Automatic Compression Testing Machine, Capacity 5000kN, Compact model with Aimil software and DT-85 Data Taker, without computer, with load control facility

Fully Automatic Compression Testing Machine - Servo Controlled, with load control facility

General Specifications									
Capacity	Model	Specs of Load Measuring Device		Maximum Clearance between Platens	Maximum Distance between Side Plates	Platen Size	Piston Diameter	Piston Stroke	Specimen Size
kN	CAT No. AIM	Range	Resolution(kN)	mm	mm	mm	mm	mm	
50	302E-FA-3	50	0.002	390	260	140 Square	53	50	50.0 mm & 70.6 mm Cube
100	305E-FA-3	100	0.01	390	260	140 Square	78.7	50	50.0 mm & 70.6 mm Cube
250	308E-FA-3	250	0.01	390	260	140 Square	78.7	50	50.0 mm, 70.6 mm & 100 mm Cube
500	311E-FA-3	500	0.01	380	260	230 Round	157.0	50	50.0 mm, 70.6 mm & 100 mm Cube
1000	314E-FA-3	1000	0.1	380	260	230 Round	157.0	50	100 mm, 150 mm Cube & 100 mm, 150 mm Dia Cylinder
2000	317E-FA-3	2000	0.1	380	360	Upper-300 Round Lower-200 Square	222.2	50	100 mm , 150 mm Cube & 100 mm, 150 mm Dia Cylinder
3000	320E-FA-3	3000	0.1	410	400	Upper-300 Round Lower-200 Square	272.2	50	150 mm to 300 mm Cube & 300 mm Dia x 300 mm High Cylinder
5000	320E-FA-5000-3	5000	0.2	580	600	350 Square	341	50	150 mm to 300 mm Cube & 150 mm x 300 mm Cylinder to 300 mm x 600 mm Cylinder

Note:

- Electrical Specifications: Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply.
- Brick Platens: Appropriate brick platens can be provided at extra cost.
- Spacers: Set of spacers to suit specimen sizes mentioned against each model is supplied along with the machine
- Machines are supplied with an NABL accredited calibration certificate.
- Machines of higher capacities can be manufactured as per customer requirements.

Refurbish Services

Aimil has had a long experience of manufacturing Compression Testing Machines. Our machines are the finest of the types available in the market today.
They are known for their quality and performance.
Through 'Refurbish Services' we would like to extend our expertise to all our customers. We have the technology and ability to upgrade, digitize, service and calibrate most common makes of Compression Testing Machines be it national or international brands.
With Refurbish services provided by us you get the benefit of working with the leading manufacturer recognized for the most reliable Compression Testing Machines to take your manufacturing performance to a higher level.

Our service packages include :

- Conversion of Analogue machine to Digital model
- Conversion of Digital machine to Microprocessor based model
- Conversion of Microprocessor Machine to fully Automatic model & even from Analogue to Fully Automatic or any order of your choice/need We can help you ensure conformance to standards, enhance your Hardware and software capabilities and streamline operations.

We have dedicated team of experienced engineers that will help you select the retrofit solution best suited for your requirement.
For all your CTM re-engineering requirements, you can depend on our in-house engineering and manufacturing capabilities.
We will refurbish your existing Compression Testing Machine to look new, all geared to meet your needs of date.

Mail your requirements to our Product Specialist at:
newproducts@aimil.com, info@aimil.com

Conversion Kits:

Conversion kits for Compression Testing Machines are available as below:

Analogue Machine

- Analogue (AN) to Digital (DG)
- Analogue (AN) to Micro-processor (Mu)
- Analogue (AN) to Automatic (FA)

Digital Machine

- Digital (DG) to Micro-processor (Mu)
- Digital (DG) to Automatic (FA)

Micro-processor machine

- Mirco-processor (Mu) to Automatic (FA)

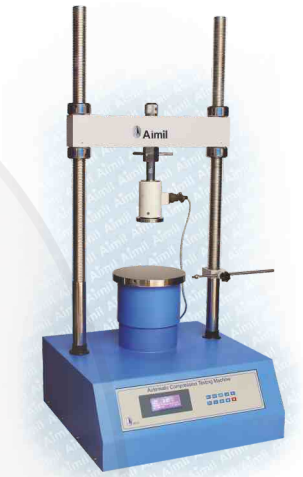
Note:

- In conversion, machine capacity will remain unchanged.
- After conversion, re-calibration of the machine is needed.

AIM 33101	Flexure Test Attachment	–	For use with Aimil Compression Testing Machines for testing Beam of sizes 100x100x500 mm and 150x150x700 mm.

Compression Testing Machine Electromechanical Type, 50kN Capacity

AIM 302E-Mu-1EM, AIM 302E-FA-2EM



For compressive strength testing of materials within the loading rate range of 0.05 to 0.5 kN/s.
The new electromechanical type CTM enables low pace rate control with high precision. The machine doesn't need a hydraulic pump & has an in-built indicator / controller.

Technical Specification:

Load Measurement	:	Load Cell 50kN
Capacity	:	50kN
Least Count	:	0.001kN
Frame	:	2 pillar type table mounted
Display	:	4 Line LCD
Pace Rate Control	:	0.05 to 0.5 kN/s
Loading Type	:	Electromechanical
Net Weight	:	80kg approx

Features:

- High Accuracy in pace rate control.
- No hydraulic pump required.
- Overload safety protection
- User can set break point
- Compressive strength testing of low strength material possible with precision

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

Ordering Information :	
AIM 302E-Mu-1EM	Micro Controller based Compression Testing Machine Electromechanical Type, 50kN Capacity
AIM 302E-FA-2EM	Fully Automatic Compression Testing Machine Electromechanical Type, 50kN Capacity

Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control

AIM 302-SERV, AIM 305-SERV, AIM 308-SERV, AIM 311-SERV, AIM 314-SERV, AIM 317-SERV, AIM 320-SERV & AIM 320-5000-SERV
AIM 302-SERV-1, AIM 305-SERV-1, AIM 308-SERV-1, AIM 311-SERV-1, AIM 314-SERV-1, AIM 317-SERV-1, AIM 320-SERV-1 & AIM 320-5000-SERV-1

Compliance with Following Standards:

IS 560, IS 14858 : 2000

Aimil Series of Servo Controlled Compression Testing Machines are the finest of their types available. The rugged construction and extreme simplicity makes it possible for personnel with minimum Training to operate them with ease and complete dependability

Aimil Servo Controlled Compression Testing Machine is a fully automated version of the manual/semi-automatic Compression testing Machine having provision for stress & strain controlled loading. The Machine is available in 50kN to 5000kN ranges. It has provision for automatically turning the pump on and off, controlling the set pace rate/displacement rate and switching the machine off under predetermined conditions.

The Control releases the pressure at the end of every run and reinitializes the machine at the beginning of every test. Data acquisition, storage, management and analysis are all fully automated.

The system has essentially three parts.

- Loading Unit
- Hydraulic Power Pack
- Control Unit & Display

Loading Unit

The Loading unit is of fully welded construction having a cross head, base and solid side plates. A 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.

Hydraulic Power Pack with Oil Cooling Arrangement

- Max. working pressure: 300 / 700bar
- Max. oil delivery: 10 lpm
- Oil tank capacity : 150 ltrs.
- Hydraulic ports for connection of test frames
- Oil flow control via servo-controlled proportional valve
- Oil water cooling system with forced ventilation
- Operating temperature range for servo valve : -29°C to 135°C.
- Burst pressure : 250% max supply pressure
- External Leakage : zero.
- With oil cooling arrangement
- Vibration : 30g, 3 axes
- Fluid cleanliness level per ISO 4406:1999: min. 16/14/12 & recommended 14/12/10
- Hysteresis should not be more than 3.0%
- Threshold should not be less than 0.5%.
- Supply pressure : constant

Hardware and Controlling Unit

- Analog Resolution: 24bit
- Inbuilt RTC for the real time in standalone mode
- Easy Configurable Windows Based Software to configure the DAQ through PC
- Real time Data Acquisition system controllable through PC also

- LCD display with 4 line 20 characters with back light
- Working range of load control 0.1 to 1% of full scale
- Working range of displacement control 1 micron to 100 micron per sec
- Operating Temperature range: -45°C to 70°C
- Display functions – channel data
- Power supply – 230V, 50.Hz or 12V DC on customer requirement.
- Inbuilt battery for Real time clock.
- Accepts input as analog voltage in the range of ±2.5V.
- Log interval should be configurable from 1 sec to HH:MM:SS
- System should have the capability to interface the counter to interface the encoder for future expansion

Analog Inputs:
- Maximum 8 number of analog channels
- Maximum Input Voltage : 0-2.5V ±2.5V
- Accuracy 0.1%
- Over Protection Voltage: 10V

Memory & Communication:
- Internal storage capacity is 8 M bit (approx. 2MB) & has provision for interfacing pen-drive.
- Data can be stored in PC directly

Communication Interfaces:
- USB & Ethernet

Minimum Recommended Computer Hardware
- 2 GHz Pentium Dual Core or better
- 8 GB RAM or better
- Using multiple testing machines may require additional memory and/or a faster processor
- 512 MB DirectX 10.0 capable video card or better
- 500 GB HD Drive
- USB Port
  - Additional ports required if using RS232/USB adapters to communicate with machines
  - Additional ports for required measuring devices, barcode scanners, etc.
- Mouse or pointing device and keyboard supported by Windows
- Monitor
  - 32-bit color
  - 1600 x 900 (Widescreen) or higher
- Windows compatible printer (for reporting capabilities)
- Wi-Fi / LAN connectivity

Software Requirements
- Aimil Servo Software is designed for 32-bit & 64-bit operating systems running **Windows 7.** It does Not support Windows XP and below.
  Note: A 64-bit operating system is preferred for best Performance.

Aimil Scope of Supply of Software include :
- Desktop Computer or Laptop with licensed Windows7-64 bit
- Aimil Servo Software
- MS-Office

Aimil Servo Software:
- Control Parameter - Load/Displacement
- Has facility to monitor the data of different channels
- Labels of channels are configurable
- Plots - Displacement vs Time, Load vs Time, Load vs Displacement, Stress vs Strain graphs etc.
- Report available in excel & PDF.

Physical Specification:
- Power Rating of motor: 5 HP
- Voltage: 440 V, 3-phase AC supply.

Fully Automatic Compression Testing Machine - Servo Controlled with Load & Displacement Control Facility & DT-85 Data Taker

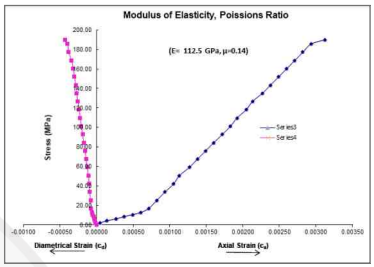
All specifications are similar to our Fully Automatic Compression Testing Machine Servo Controlled with load controlled facility including software features.

Fully Automatic Compression Testing Machine Servo Controlled with DT-85 Data Logger Module is engineered to deliver accurate and reliable measurements of Young's modulus and Poisson's ratio.

Key Features:
- **Measurement Capability:** Measures Young's modulus and Poisson's ratio of concrete and rock specimens.
- **Versatile Sensor Compatibility:** Supports various sensors like displacement sensors (LVDT) and strain gauges.
- **Precision and Reliability:** Ensures high accuracy in material testing for research and industrial applications.
- **Displaying Channels:** Capable for displaying different parameters in different channels Simultaneously.

DT-85 Data Logger Specifications
- Type: Advanced Data logger
- Display Type: LCD, Backlit, 2 line by 16 characters
- Data Memory: 128 MB
- Battery Type: 6 V Lead Acid
- Channels: 16 to 48 Analog and 12 Digital (expandable using CEM20 modules), high-speed counter inputs, and phase encoder inputs
- Interface: Includes SDI-12, Ethernet, MODBUS, RS232, RS422, RS485, USB

- Sensor Types: Numerous, including thermocouples, thermistors, temperature sensors, strain gauges, and bridge sensors



Note: Displacement Sensors (LVDT) or Strain Gauges Disposal Types are optional accessores.

Ordering Information :

AIM 302-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 50 kN with Aimil Software
AIM 305-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 100 kN with Aimil Software
AIM 308-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 250 kN with Aimil Software
AIM 311-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 500 kN with Aimil Software
AIM 314-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 1000 kN with Aimil Software
AIM 317-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 2000 kN with Aimil Software
AIM 320-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 3000 kN with Aimil Software
AIM 320-5000-SERV	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 5000 kN with Aimil Software
AIM 302-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 50 kN with Aimil Software & DT-85 Data Taker
AIM 305-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 100 kN with Aimil Software & DT-85 Data Taker
AIM 308-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 250 kN with Aimil Software & DT-85 Data Taker
AIM 311-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 500 kN with Aimil Software & DT-85 Data Taker
AIM 314-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 1000 kN with Aimil Software & DT-85 Data Taker
AIM 317-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 2000 kN with Aimil Software & DT-85 Data Taker
AIM 320-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 3000 kN with Aimil Software & DT-85 Data Taker
AIM 320-5000-SERV-1	Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control, Capacity 5000 kN with Aimil Software & DT-85 Data Taker

Note: 1. Flexure Testing with servo control also available as an attachment or in stand alone operation, as per relevant standards.
2. Split tensile attachment for testing cylinders and cubes can be provided on request, at an additional cost.
3. Servo Compression Testing Machine, 3000kN for different size specimens also available on request.

Fully Automatic Compression Testing Machine Servo Controlled with Load & Displacement control

General Specifications									
Capacity	Model	Specs of Load Measuring Device		Maximum Clearance between Platens	Maximum Distance between Side Plates	Platen Size	Piston Diameter	Piston Stroke	Specimen Size
kN	CAT No. AIM	Range	Resolution(kN)	mm	mm	mm	mm	mm	
50	302-SERV	50	0.002	390	260	140 Square	53	50	50.0 mm & 70.6 mm Cube
100	305-SERV	100	0.01	390	260	140 Square	78.7	50	50.0 mm & 70.6 mm Cube
250	308-SERV	250	0.01	390	260	140 Square	78.7	50	50.0 mm, 70.6 mm & 100 mm Cube
500	311-SERV	500	0.01	380	260	230 Round	157.0	50	50.0 mm, 70.6 mm & 100 mm Cube
1000	314-SERV	1000	0.1	380	260	230 Round	157.0	50	100 mm, 150 mm Cube & 100 mm, 150 mm Dia Cylinder
2000	317-SERV	2000	0.1	380	360	Upper-300 Round Lower-200 Square	222.2	50	100 mm , 150 mm Cube & 100 mm, 150 mm Dia Cylinder
3000	320-SERV	3000	0.1	410	400	Upper-300 Round Lower-200 Square	272.2	50	150 mm to 300 mm Cube & 300 mm Dia x 300 mm High Cylinder
5000	320-5000-SERV	5000	0.2	580	600	350 Square	341	50	150 mm to 300 mm Cube & 150 mm x 300 mm Cylinder to 300 mm x 600 mm Cylinder

Note:

- Electrical Specifications: Standard units are suitable for operation on 220 V/230 V, single phase, 50 Hz, AC supply.
- Brick Platens: Appropriate brick platens can be provided at extra cost.
- Spacers: Set of spacers to suit specimen sizes mentioned against each model is supplied along with the machine
- Machines are supplied with an NABL accredited calibration certificate.
- Machines of higher capacities can be manufactured as per customer requirements.

Aimil Smart-Link Connectivity Package

The Aimil Smart-Link connectivity package enhances the capabilities of automatic compression testing machines by integrating them into your lab infrastructure. It enables Aimil automatic concrete compression machines to obtain sample information digitally by taking inputs from balances, calipers, and barcode readers, reducing the incidence of manual data entry and its associated risk of transposing errors. The addition of an integrated smart camera for recording your testing ensures that you can deliver unadulterable results that can be easily documented and shared.

Features:

Enhance Testing Efficiency:
- Automatically acquire sample information from ancillary devices such as balances, calipers, and barcode readers.
- Reduce manual data entry and eliminate transposing errors.

Improve Testing Transparency:
- Connect a high-resolution smart camera for test video recording.
- Obtain a verifiable audit trail.

Sample Information Acquisition
Direct acquisition provides a tidier operation, eliminating the possibility of data transposition errors. Compatible devices include but are not limited to:
- Calipers
- Digital balances
- ID barcode readers by camera

Test Video Recording:

High-Resolution Video Recording:
- Fit your compression machine with an integrated high-resolution smart camera to record all your testing.
- Video recording not only proves that a test has been performed but also provides unalterable test results, raising the bar of reliability and transparency.
- At the end of a test, easily save your recording and test results in the PC software's archive.

Automatic Sample Identification:
- The SID READER module is an extra tool to be activated in the PC software, allowing the smart camera to read and recognize the barcode on a sample.
- The sample ID, read by the camera, will be displayed during the test and recorded along with other data such as date, time, elapsed time, load, and strength values.

Ordering Information	
Aimil Smart-Link Enterprise Package	
AIM-XXXX	Enterprise package for machines controlled by PC via DATAMANAGER software
Accessories:	
Digital Balance	
AIM-XXXX	20kg x 0.1g resolution digital balance. Compatible with Aimil Smart-Link packages
Digital Calipers and Cables	
AIM-XXXX	Digital caliper 300mm x 0.01mm. Compatible with Aimil Smart-Link Local package
Smart Camera	
AIM-XXXX	High-resolution smart camera for video recording. Requires PC control by DATAMANAGER software
Rigid Support for Smart Camera	
AIM-XXXX	Rigid support for the smart camera

Aimil's SCADA System

Aimil's SCADA (Supervisory Control and Data Acquisition) system is a robust, computer-based control system designed to acquire, track, control, and monitor real-time data from remote or local lab equipment. Configurable for a range of industrial applications, it integrates software, hardware, and protocols, making it suitable for industries like cement, concrete, oil, water, and wastewater.

Features:

- User-Friendly Interface: Remote monitoring via an intuitive web application.
- Data Collection and Processing: Efficiently collects raw data and processes it into detailed reports.
- Reduction of Manpower and Errors: Automates operations to reduce manpower needs and minimize errors.
- Minimization of Human Intervention: Streamlines processes to reduce manual intervention.
- Alerts and Notifications: Provides timely alerts for critical events and statuses.
- Energy and Cost Efficiency: Optimizes operations to save energy, time, and costs.
- Audit Log and Activity History: Maintains comprehensive logs for accountability and tracking.
- Information Bifurcation: Detailed monitoring with plant/location-wise data bifurcation.

Functions:

- Data Acquisition and Display: Real-time data collection and visualization.
- Data Processing: Transforms raw data into actionable insights and reports.
- Notification and Alert: Sends alerts based on predefined conditions.
- Audit Log/Activity History: Records all activities and events for future reference.
- Data Representation in Report Form: Presents data in detailed report formats.
- Machine Interfacing: Connects with various machines for data collection and control.
- Supervisory Control: Provides control over connected equipment and systems.

Communication Protocols:

- Serial • USB • TCP/IP • IoT

Integration Capabilities:

- API • DB to DB • FTP • File System

Workflow:

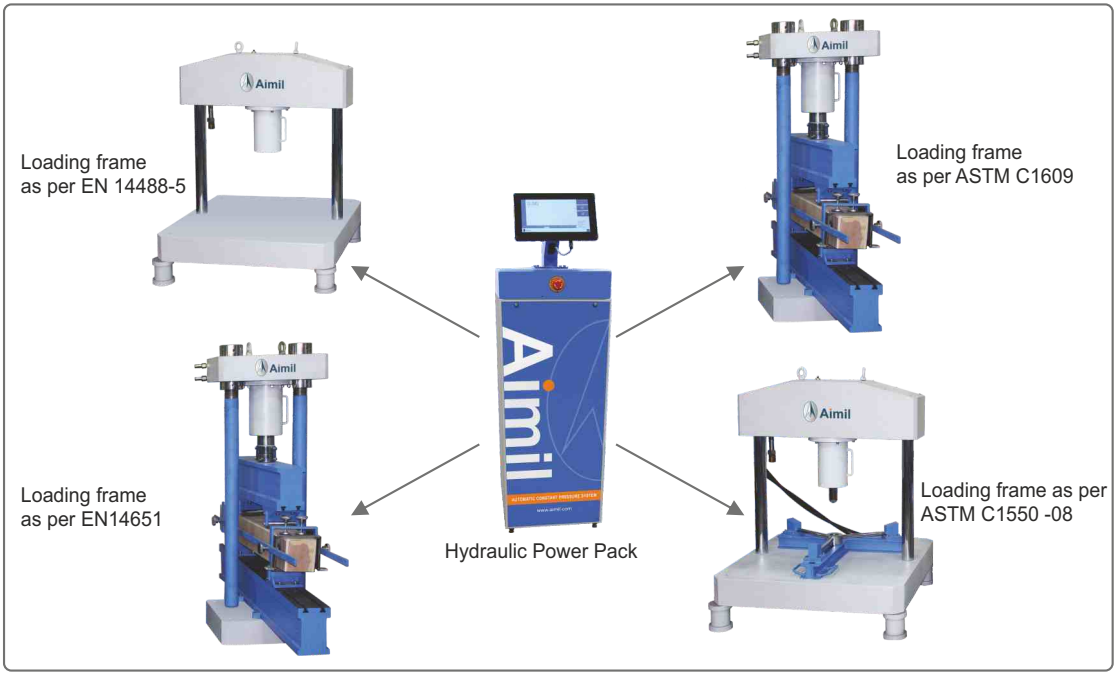
- Sample ID Entry: User enters/scans sample ID and sends it to the ERP server.
- Test Initialization: Desktop application sends a start command to the machine.
- Test Completion Indication: Machine signals test completion to the desktop application.
- Data Processing: Software processes the data and sends it to the ERP.
- Result Storage: Sample results are uploaded to the cloud.

Additional Features:

- Web Application: Real-time monitoring with a user-friendly dashboard.
- Client Application: Seamless data acquisition and control via machine connectivity.
- Project Wise Report: Generates detailed reports based on specific projects.
- Sync Data: Ensures consistent and accurate data across platforms.

Ordering Information :		
44	**AIM _____**	ACTM with SCADA (Supervisory Control and Data Acquisition)
44a	**AIM _____**	ACTM with CTM Upgradation Kit
44b	**AIM _____**	ACTM with SMS & Web Application (ACTM with IoT (Internet of Things)
44c	**AIM _____**	ACTM with LIMS (Laboratory Information Management System)
44d	**AIM _____**	ACTM with Balance & Ethernet
44e	**AIM _____**	ACTM with Smart Link Connectivity Package

Aimil's Fibre Reinforcement Concrete Testing Machine (FRC)



Ref. Std. : ASTM C ASTM C1550-08 EN 14488-5, EN 14651, ASTM C1609

Description:

Aimil' Fibre Reinforcement Concrete Testing Machine (AFRC) is automatic testing machine to study concrete performance in plastic state and compare the result under various composition of material. AFRC help to improve the capacity of material to absorb energy after cracking. It is complying various standard of ASTMs for evaluating toughness of fiber reinforced concrete (ASTM C1609 for beam and ASTM C 1550-08 for round panels). It facilitates testing of beams based on European Standard EN 14651 & EN 14448-5 for beam & square panels respectively

Applications:

- To determine toughness
- First crack Strength
- Energy absorption of FRC

Technical Specifications:

System consists of Hydraulic power pack, controlling unit, software, loading frame with testing accessories.

1. Hydraulic Power Pack

- Hydraulic ports for connection of test frames
- Servo hydraulically controlled
- Forced ventilation for oil cooling
- Operating temperature range for servo valve: -20°C to 80°C.
- External Leakage: zero
- Fluid cleanliness level per ISO 4406:1999: min. 16/14/12 & recommended 14/12/10
- Supply pressure: constant
- Power supply - Voltage: 440 V, 50 Hz, 3-phase AC supply

2. Control Unit

- Touch screen display to show the reading
- Maximum load/displacement and stress/strain result display
- LAB port output and USB output
- Internal memory to store the records of completed test
- Results can be in Imperial/English, Metric, or SI units
- Analog Resolution: 24bit
- Inbuilt RTC for the real time in standalone mode

- Easy Configurable Windows Based Software to configure the DAQ through PC
- Real time Data Acquisition system controllable through PC also
- Display with 4 line 20 characters with back light
- Working range of displacement control from (0.05mm/min to 4mm/min)
- Operating Temperature range: -20C to 70C
- Display functions – channel data
- Power supply – 230V, 50. Hz or 12V DC on customer requirement
- Inbuilt battery for Real time clock
- Accepts input as analog voltage in the range of ±2.5V.

3. Control Software

- Control Parameter - Displacement/Load
- Has facility to monitor the data
- Labels of channels are configurable
- Plots Graph - Load vs Displacement, Load vs CMOD etc (If ordered with relevant sensors)
- Report in excel & PDF for storing the data
- Generates graphs in effective mode

4. Loading frame with Testing accessories

AIM 308FRC-1LU

The Loading unit is of fully welded construction having a Fixed cross head, base, and solid side column to provide maximum rigidity throughout the working range. A double acting hydraulic jack is fixed to the top. To facilitate testing of specimens, size an overall diameter 800mm and thickness 75mm

Technical Specification	
Max. load capacity	250kN
Type	Two pillar
Hydraulic jack	250 KN Double acting Type
Least Count	0.001kN
Load sensor	High precision pressure transducer
Piston Travel	150mm
Loading Piston	Steel Hemispherical piston (Radius -80+-5mm and piston shaft 50+-5mm)
Max. Vertical clearance	720mm
Vertical clearance between Piston and round panel attachment	165mm
Horizontal clearance	830mm
Base dimension	1050mmx1050mmx200mm (LXBXH)

Test attachment

a. Energy absorption testing on round panel of fiber reinforced concrete as per ASTM C1550 -08. Including supporting Triangular base and spherically seated loading element.

Essential accessories

- Transducer holder
- Displacement transducer, 50 mm stroke with flat at centre of panel -1No
- Displacement transducer, 10 mm stroke for monitor the support displacements – 3Nos

AIM 308FRC-2LU

The Loading unit is of fully welded construction having a Fixed cross head, base, and solid side column to provide maximum rigidity throughout the working range. A double acting hydraulic jack is fixed to the top. To facilitate testing of specimens size square panel 600x600x100mm

Technical Specification	
Max. load capacity	250kN
Type	Two pillar
Hydraulic jack	250 KN Double acting Type
Least Count	0.001kN
Load sensor	High precision pressure transducer
Piston Travel	150mm
Loading Piston	Rigid steel square block 100mmx100mmx20mm
Max. Vertical clearance	720mm
Vertical clearance between Piston and top surface square panel attachment	165mm
Horizontal clearance	830mm
Base dimension	1050mmx1050mmx200mm (LXBXH)

Test attachment

a. Energy absorption testing on square slab of fiber reinforced concrete as per EN 14488-5. Including supporting square base 500x500mm and spherically seated loading element.

Essential accessories

- Transducer holder
- Displacement transducer, 50 mm stroke with flat head at centre of square panel – 1No

AIM 308FRC-3LU

The Loading unit is of fully welded construction having a adjustable cross head, base, and solid side plates to provide maximum rigidity throughout the working range. A hydraulic jack is fixed to the top. The rollers of the flexural assembly are hardened, ground and polished. The upper roller assembly is provided with self-aligning action suitable for three point loading. To facilitate testing of various size specimens, suitable size spacer is provided for testing beams of 100X100X500mm and 150X150X 700mm.

Technical Specification	
Max. load capacity	250kN
Type	Two Piler
Hydraulic Jack	250 KN Double acting Type
Least Count	0.001kN
Load sensor	High precision pressure transducer
Type of loading	Three point
Piston Travel	150mm
Maximum vertical distance	1220mm
Vertical clearance between upper roller to lower roller	180mm
Horizontal clearance	300mm
Roller diameter	30mm

Test attachment

a. Measurement of Beam deflection and toughness of fibre reinforced concrete as per EN 14651

Essential accessories

- Transducer holder
- Displacement transducer, 50 mm stroke with flat head – 2Nos
- Deflection measuring device- This device is fixed directly on the fiber reinforced concrete beam under test. It is placed between the loading bearers of a flexure frame or of a flexure device in a compression frame. – 1 No

- Flexure test attachment 3-point loading as per EN 14651 – 1No
- CMOD Accessory As per EN 14651 Displacement transducer for measuring of crack opening, measuring range (3-8mm) supply with fixing Jigs – 1No
- Datum block to be glued on the on the lower side of concrete beam for the first crack strength test – 10 Nos

AIM 308FRC-4LU

The Loading unit is of fully welded construction having a adjustable cross head, base, and solid side plates to provide maximum rigidity throughout the working range. A hydraulic jack is fixed to the top. The rollers of the flexural assembly are hardened, ground and polished. The upper roller assembly is provided with self-aligning action suitable for four-point loading. To facilitate testing of various size specimens, suitable size spacer is provided for testing beams of 100X100X500mm and 150X150X 700mm.

Technical Specification	
Max. load capacity	250kN
Type	Two Piler
Hydraulic Jack	250 KN Double acting Type
Least Count	0.001kN
Load sensor	High precision pressure transducer
Type of loading	four point
Piston Travel	150mm
Maximum vertical distance	1220mm
Vertical clearance between upper roller to lower roller	180mm
Horizontal clearance	300mm
Roller diameter	40mm

Test attachment

a. Measurement of Beam deflection and toughness of fibre reinforced concrete as per ASTM C1609

Essential accessories

- Transducer holder
- Displacement transducer, 50 mm stroke with flat head – 2Nos
- Deflection measuring device - This device is fixed directly on the fiber reinforced concrete beam under test. It is placed between the loading bearers of a flexure frame or of a flexure device in a compression frame. – 1 No
- Flexure test attachment four-point loading as per ASTM C1609 – 1No

Minimum Recommended Computer Hardware

- 2 GHz core i3 or better
- 8 GB RAM
- Using multiple testing machines may require additional memory and/or a faster processor
- 512 MB DirectX 10.0 capable video card or better
- 1 TB HD Drive
- RS232 Serial Port
- 1 integrated serial port (not USB) where possible per testing machine
- The default report generated automatically in crystal reports & can be printed directly. The reports can also
- be exported to excel & PDF formats.
- If RS232 serial port unavailable, then 1 USB serial port with RS232/USB adapter is required (per
- machine)

USB Port

- Additional ports required if using RS232/USB adapters to communicate with machines
- Additional ports for required measuring devices, barcode scanners, etc
- Mouse or pointing device and keyboard supported by Windows

Monitor
- 32-bit color, size 19"
- 1600 x 900 (Widescreen) or higher

Windows compatible printer (for reporting capabilities)
Windows compatible sound card and speakers (for audio playback)
An active Internet connection (for team viewer use and help desk support)

Software Requirements
- The Aimil Software's are designed for 32-bit & 64-bit operating systems running Windows 7, Windows 8 or
- Window 10. It does Not support Windows XP and below.
- Internet Explorer 8 or higher

Ordering Information :	
AIM 308FRC-1	Fibre Reinforcement Concrete Testing Machine 250kN Capacity (Energy absorption testing on round panel) as per ASTM C1550-08
AIM 308FRC-2	Fibre Reinforcement Concrete Testing Machine 250kN Capacity(Energy absorption testing on square slab) as per EN 14488-5.
AIM 308FRC-3	Fibre Reinforcement Concrete Testing Machine 250kN Capacity (Measurement of Beam deflection and toughness) as per EN 14651
AIM 308FRC-4	Fibre Reinforcement Concrete Testing Machine 250kN Capacity (Measurement of Beam deflection & toughness) as per ASTM C1609
AIM 308FRC-5	Fibre Reinforcement Concrete Testing Machine 250kN Capacity (Complete set) as per ASTM C1550-08, EN 14488-5, EN 14651 & ASTM C1609
Optional Accessories:	
AIM 308FRC-1LU	Loading frame 250kN with testing accessories as per ASTM C1550-08
AIM 308FRC-2LU	Loading frame 250kN with testing accessories as per EN 14488-5
AIM 308FRC-3LU	Loading frame 250kN with testing accessories as per EN 14651
AIM 308FRC-4LU	Loading frame 250kN with testing accessories as per ASTM C1609
AIM 308FRC-PU	Hydraulic power pack with control unit & control software

Note 1: Computer can be provided on request at extra cost.
Note 2: To operate an additional test when any of AIM 308FRC-1, AIM 308FRC-2, AIM 308FRC-3 & AIM 308FRC-4 have already been ordered, only the additional loading frames given under optional accessories need be ordered.

Creep Testing

AIM 323

Ref. Standard : ASTM -C512

This Apparatus is designed to determine the Creep of Concrete Cylinder subjected to sustained longitudinal compressive load.

This test method is limited to Concrete in which the maximum aggregate size does not exceed 2 inch (50mm)

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

The equipment consist of the following replaceable parts :

- One reaction frame suitable for 3 Nos.150 dia x 300mm long cylindrical samples
- One pumping unit electrically operated
- One hydraulic jack
- One load gauge

AIM 323

Reaction Frame

Reaction frame consists of Upper & Lower Jack plates and Upper & Lower Loading Plates bearing on the ends of the Loaded specimen, load maintaining elements (springs), threaded rods & nuts to take the reaction of loaded system.

Pumping Unit

Motorised pumping unit of 1000kN is housed in an elegant cabinet and is of two speed design driven by an electric motor. The motor of the pump is connected to mains through ON-OFF Push Button Switch. There is slow and fast lever, which is fitted with a knob. By doing to and fro movement of this lever, coarse adjustment of rate of loading can be done.

Fine adjustment can be done by rotating the knob fitted on this lever. A release valve is provided on the top of the pump. Pressure can be released by unscrewing the knob. Pumping unit is submersed in oil tank& it is fitted with oil filler plug cum dipstick & drain plug.

Hydraulic Jack

It consists of a cylinder and a piston. Lifting handle is fixed on the cylinder body. An inlet nipple is fixed for coupling with the connecting pipe. A Teflon Seal is provided on the hydraulic jack to prevent leakage of the oil under pressure. The capacity of the jack is 1000kN. An air vent is provided in the piston for bleeding out air from the system before the jack is put to use for conducting a test. For bleeding out air the Allen Screw for airvent should be loosened. Pump oil to Jack. First air will come out when continuous stream of oil starts coming out tighten the allen screw. A retraction spring is provided in the hydraulic jack so that the piston comes back to its original position after load is released. The travel of the piston of the hydraulic jack is 100mm. If the piston is pushed out beyond this travel, the retraction spring will get damaged.

Load Gauge

The load is indicated on 20cm dial Load gauge 1000kN capacity. The Load gauge can be fixed to the Load gauge adaptor. A red maximum pointer is fitted to the Load gauge to indicate the maximum load applied on the specimen. A drag knob is provided to operate the maximum pointer.

The equipment consist of the following replaceable parts :

AIM 23902	Reaction Frame	1No.
AIM 32701	Electrical Pumping Unit without hand pump	1No.
AIM 314-LG 1000-EO-1	Load gauge 0-1000 kN x 5 kN on 157mm ram dia, electrical operated	1No.

Ordering Information :	
AIM 323	Creep Testing Machine, Capacity 1000 kN

Note:
- Creep Test Rig of other capacities can be supplied on request.
- Attachment for strain measurement can be provided on request.
- Digital Model can be supplied on request.

Flexural Strength Testing Machine

AIM 331, AIM 332, AIM 332E-DG-1, AIM 332E-MU-1 & AIM 332E-FA-2

AIM 332

Ref. Std. : IS: 516, 9399:1979, BS: 1881 and ASTM C78.

The Flexure Strength Testing Machines are designed to test flexural strength of concrete beams. The design provide maximum rigidity throughout their working range.

The load is applied by the downward movement of the piston.

A spacer is provided for testing different size of beams.

The load is indicated on a calibrated bourdon tube type load gauge of range : 0 -100 kN x 0.5 kN

The load gauge is calibrated against National Physical Laboratory/ National Council for Cement and Building Materials certified proving ring.

Flexure Testing Machines Salient Features:

- Light weight, rugged high strength frame
- Double action hydraulic pump
- Self-aligning roller assembly
- Hydraulic jack provided with retraction spring
- For testing beams of 100X100X500mm and 150X150X 700mm.

Suitable for operation on 220V, 50Hz, Single Phase, AC supply
(For Electrically Operated Flexure Testing Machine).

The following models of Flexural Strength Testing Machines are offered :

Cat. No.	Capacity	Type Of Pumping	Least Count	Type Of Loading	Centre Distance Between Supporting Rollers For Beam Size (mm) 150 x 150 x 700, 100 x 100 x 500		Centre Distance Between Loading Rollers For Beam Size (mm) 150 x 150 x 700, 100 x 100 x 500	
AIM 331	100 kN	Manual	0.5 kN	Third Point	600 mm Loading	400 mm	200 mm	133 mm
AIM 332	100 kN	Electrical	0.5 kN	Third Point	600 mm Loading	400 mm	200 mm	133 mm
AIM 332E-DG-1	100 kN	Electrical	0.01 kN	Third Point	600 mm Loading	400 mm	200 mm	133 mm
AIM 332E-Mu-1	100 kN	Electrical	0.01 kN	Third Point	600 mm Loading	400 mm	200 mm	133 mm
AIM 332E-FA-2	100 kN	Electrical	0.01 kN	Third Point	600 mm Loading	400 mm	200 mm	133 mm

Ordering Information :	
AIM 331	Flexure Testing Machine Hand Operated, Capacity 100 kN
AIM 332	Flexure Testing Machine Electrically Operated, Capacity 100 kN
AIM 332E-DG-1	Digital Flexure Testing Machine, Capacity 100 kN
AIM 332E-Mu-1	Mu Flexure Testing Machine with automatic pace rate controller, Capacity 100 kN
AIM 332E-FA-2	Automatic Flexure Testing Machine with Aimil Software without Computer, Capacity 100 kN

Note: Flexure Testing Machine with other capacities can be supplied on request.

Servo Flexure Testing Machine for FRC Beams

AIM 332-SERV

Ref. Std. : ASTM C1018, ASTM C1609, IS 516, ASTM C78, BS 1881

This Instruments is used for testing of fibre reinforced concrete beams and normal concrete beams as well.

This test method evaluates the flexural performance of fiber-reinforced concrete using parameters derived from the load-deflection curve obtained by testing a simply supported beam under third-point loading using a closed-loop, servo controlled testing system.

Technical Specification:

Hydraulic Power Pack and Control Unit exactly as per AIM 302 to AIM 320 serv models.

Loading Frame : As per AIM 332 for IS or Custom Frames as per ASTM sizes
(Adjustable load frames to cover a wide range of beam sizes can also be provided.)

Loading Unit

The Loading unit is of fully welded construction having a cross head, base and solid side plates to provide maximum rigidity throughout the working range. A hydraulic jack is fixed to the top. The rollers of the flexural assembly are hardened, ground and polished.

The upper roller assembly is provided with self-aligning action. To facilitate testing of various size specimens, suitable size spacer is provided.

For testing beams of 100X100X350mm/500mm and 150X150X 700mm.

Hydraulic Power Pack

- Max. working pressure: 300bar
- Max. oil delivery: 10 lpm
- Oil tank capacity: 150 ltrs.
- Hydraulic ports for connection of test frames
- Oil flow control via servo-controlled proportional valve
- Oil water cooling system with forced ventilation
- Operating temperature range for servo valve: -29°C to 135°C.
- Burst pressure: 250% max supply pressure

- External Leakage: zero.
- Vibration: 30g, 3 axes
- Fluid cleanliness level per ISO 4406:1999: min. 16/14/12 & recommended 14/12/10
- Hysteresis should not be more than 3.0%
- Threshold should not be less than 0.5%.
- Supply pressure: constant

Hardware and Controlling Unit

- Analog Resolution: 24bit
- Inbuilt RTC forthe real time in standalone mode
- Easy Configurable Windows Based Software to configure the DAQ through PC
- Real time Data Acquisition system controllable through PC also
- LCD display with 4 line 20 characters with back light
- Working range of load control 0.1 to 1 % offull scale
- Working range of displacement control 1 micron to 100 micron per sec
- Operating Temperature range: -45^{0}C to 70^{0}C
- Display functions - channel data
- Power supply - 230V, 50.Hz or 12V DC on customer requirement.
- Inbuilt battery for Real time clock.
- Accepts input as analog voltage in the range of ±2.5V.
- Log interval should be configurable from 1 sec to HH:MM:SS
- System should have the capability to interface the counter to interface the encoder for future expansion

Analog Inputs:

- Maximum 8 number of analog channels
- Maximum Input Voltage: 0-2.5V ±2.5V
- Accuracy 0.1 %
- Over Protection Voltage: 10V

Memory & Communication:

- Internal Storage capacity is 8 M bit (approx 2MB) & has provision for interfacing pendrive.
- Data can be stored on PC directly.

Communication Interfaces:

- USB & Ethernet

Recommended Computer Hardware

- 1.9 GHz, Pentium i5
- 8GB RAM
  - Using multiple testing machines may require additional memory and/or a faster processor
  - 32 bit system are limited to a maximum of 4GB of which only 3.25GB is available due to system overheads
- 512 MB DirectX 10.0 capable video card or better
- 500 GB HD Drive
- RS232 Serial Port
  - 1 integrated serial port (not USB) where possible per testing machine
  - If RS232 serial port unavailable, then 1 USB serial port with RS232/USB adapter is required (per machine)
- USB Port
  - 1 USB Port for use with the machine
  - 1 USB Port for printer
  - Additional ports for required measuring devices, barcode scanners, etc.
- Ethernet Port (To run the machine)
- DVD-ROM Drive (to run installation DVD)
- Mouse or pointing device and keyboard supported by Windows
- Monitor
  - 32-bit color
  - 1600 x 900 (Widescreen) or higher
  - If a tochscreen is used, Windows 8 is best
- Windows compatible printer (for reporting capabilities)
- Windows compatible sound card and speakers (for audio playback)
- An active Internet connection (for team viewer use and help desk support)

Software:

Customizable software for advanced flexure testing as per ASTM C1018, C1609 and EFNARC. The machine can be configured to run as per single code or a combination of the relevant codes.

For ASTM C1018, all the important parameters such as first crack deflection, peak load, toughness indices are plotted automatically. This essentially covers the new revised ASTM C1609 as well.

Both ASTM C1018 and C1609 are based on displacement control testing procedures. The Aimil Servo Flexure machine is capable of carrying out displacement, load and strain controlled testing. The machine is also capable of carrying out testing in multiple steps i.e. displacement control followed by load control and so on, under a single test list. The machine can also be used to perform normal flexure as per ASTM C78, IS 516 and BS 1881.

Salient Features:

- Customizable to any specific research requirement for FRC specimens.

Ordering Information :	
AIM 332-SERV	Servo Flexure Testing Machine for FRC specimens

Note: Servo Flexure Testing Machine for concrete beams with various capacities can be supplied on request.

Static Bending Testing Machine

AIM 332-SBT

Ref. Std. : IRS T39 & T45

Testing Machine mainly used to perform the static bending test of pre-tensioned prestressed concrete sleepers. Frame is a channelled structure, with high stiffness and high stability.

AIM 332-SBT

Salient Features

- Loading accuracy as high as ± 1% of the indicated value
- High reading accuracy and rugged design of digital display
- Simple control to facilitate ease of operation
- Robust load frame with extremely rigid construction
- Large effective clearance between columns to enable testing of standard specimen as well as structures

Loading Unit

- Consists of channelled frame, movable trolley, movable sliding rail
- Double direction hydraulic cylinder, fast test, fast return

Hydraulic Power Pack

The power pack has a directly driven pump which generates Working Pressure – 575 bar. The hydraulic pump produces a continuous non-pulsating oil flow. Hence the load application is very smooth. A pressure compensated flow control valve is provided which controls oil flow to the main cylinder. This maintains a constant rate of piston movement and hence straining rate is kept constant. This valve is hand operated and gives infinitely variable oil flow to obtain different rates of straining. Direction valve is provided to change the direction of piston.

Technical Specifications of Digital Control Unit

This includes high precision, sealed in built electronic control panel and very accurate pressure cell. A stable data acquisition system converts the analog output of pressure transducer into equivalent digital figures.

Features:

- Least count 0.1kN
- System having analog 16-bit resolution and inbuilt LCD display
- Inbuilt Real Time Clock for real time operation & display in stand - alone mode
- Internal storage capacity of 512KB
- Displays peak load and instantaneous load value

Specifications	
Test Load	1000kN
Loading accuracy	±1% of indicated value
Load resolution	0.1kN
Loading rate	30-40kN/min (Manually adjustment)
Piston stroke	150mm
Loading Span (Gap Between Jacks)	900 mm to 4300mm
Supporting Roller	30mm diameter x 300mm length
Movable rail	4150mm
Frame overall dimensions	5500mm x 620mm x 2000mm (L x W x H)
Control cabinet overall dimensions	730mm x 1130mm x 490mm (L x W x H)
Weight	4 Tonne
Power	3 Phase, 50 Hz, AC Supply

Ordering Information :

AIM 332-SBT Static Bending Machine for Concrete Sleeper, Capacity 1000kN

Servo Hydraulic Compression cum Bend Testing Machine, 3000kN

AIM 320-SERVO-S4

Application

The load is applied by a hydrostatically lubricated ram. The cylinder in turns receives pressure from the power Pack. The load is transmitted to the test specimen and is displayed . Crosshead displacement is measured via high precision displacement transducer. Load and Displace values are continuosly fed back via digital I/O card to the closed loop controller . The controller regulates the oil flow through the servo valve to maintain a specified displacement/ strain/loading rate. The oil from the pit mounted hydraulic cylinder is retuned to the power pack by a submersible pump.

Salient Features

- Servo Controlled Hydraulic Load Frame for Static Compression and Bend Testing
- Load measurement by high precision Pressure Transducer
- Load measuring accuracy as high as + 1% of the indicating value or better
- Strain measurement at variable crosshead speed
- High acquision accuracy and rugged design of multichannel closed loop controller
- Displacement/strain and Load Control facility
- Simple control button to facilitate ease of adjustment test clearance
- Fully enclosed and protected load measuring system
- Robust load frame with extremely rigid construction
- Large effective clearance between columns enable testing of standard specimen as well as structures
- Motor driven crosshead for UP/DOWN movement of upper crosshead
- Pit mounted hydraulic actuator and Load Frame for a conveneient testing level
- Controller (Computer) and Hydraulic Power Pack is kept on the floor level

Loading Unit

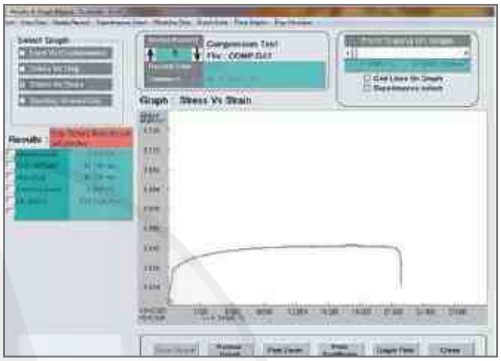
It consists of a hydraulic cylinder & piston mounted on a robust base. The loading frame consists of an upper crosshead and lower table. The upper crosshead is fitted on two hard plated rigid threaded columns. A Worm & Gear Driving System fitted on side of upper crosshead dirves the upper crosshead for testing height adjustments. The lower table fitted on hydraulic ram is installed at floor level by pit mounting the hydraulic piston and loading frame. A rail passes through the lower table to allow the rail mounted flexural/bend attached to sit between loading columns under loading axis. Before test the physical weight of entire Bend attachment with sample is tared to zero and displacement is set to zero. A square loading platen below the upper crosshead facilitates doing the compression test while the bend attachment is engaged in the loading axis.

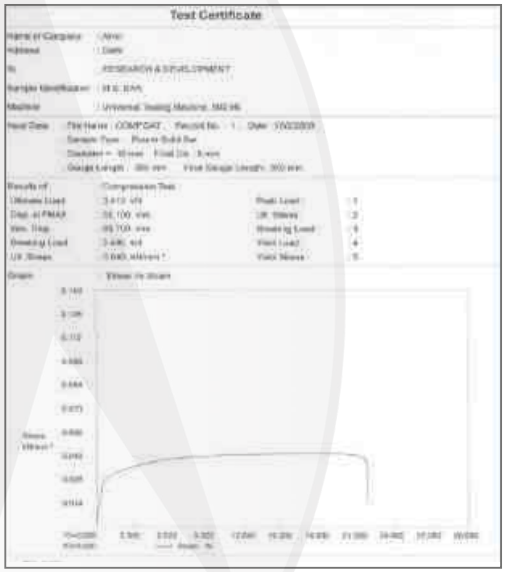
Control Unit

It consists of a multi channel closed loop controller, digital I/O Card for data acquision, computer and Material Testing Software. The test sceen displays the values of the load and displacement/deflection and the real time online graphs as it is generated during the test. After the end of test the results can be printed in report format.

Test data can be exported in Excel format as well The test data can be analysed for following graphical presentation

i. Water Fall Diagram
ii. Mean Deviation
iii. Frequency Distribution
iv. Skew Diagram
v. Histogram





Technical Specifications	
Model No	**AIM-663**
Machine Capacity	3000 kN
Measuring Range	0 to 3000 kN
Maximum Vertical Test clearance	3100 mm
Clearance between columns	550mm
Ram Stroke	300mm
Straining / Piston speed at no load	0-70mm
Electrical Power Supply	3 Phase 440V, 3 Phase

Ordering Information :	
AIM 320-SERVO-S4	Servo Hydraulic Compression cum Bend Testing Machine, 3000kN

Online LIMS Laboratory Information Management System

Would you like to get rid of ?

- Reams of paper
- Registers
- Pens and pads
- Filing Cabinet

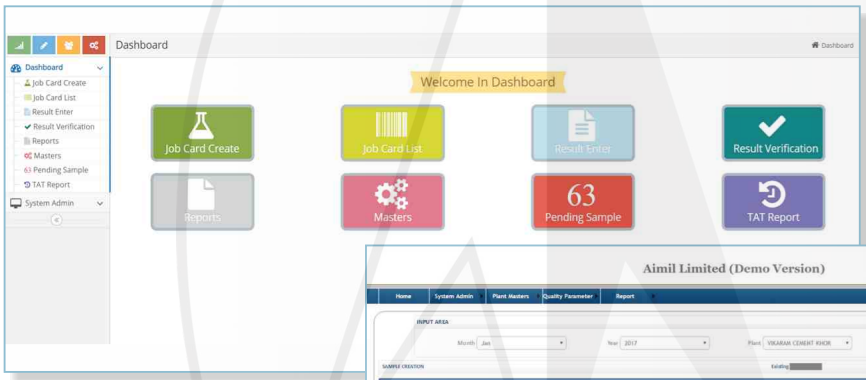
If yes, we have the solution.

Although India is going Digital, the cement industry largely still uses paper to store all its information.

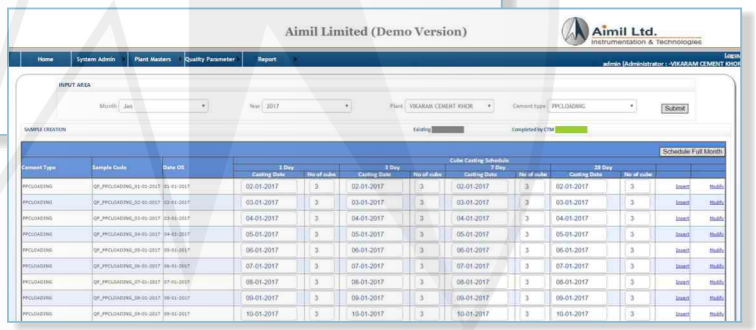
As complexity in the Lab increases, more equipment is used for different types of processing. Unless data moves directly from equipment to reports, human errors abound.

Samples are difficult to track, processes are difficult to standardize and manage, reporting becomes challenging.

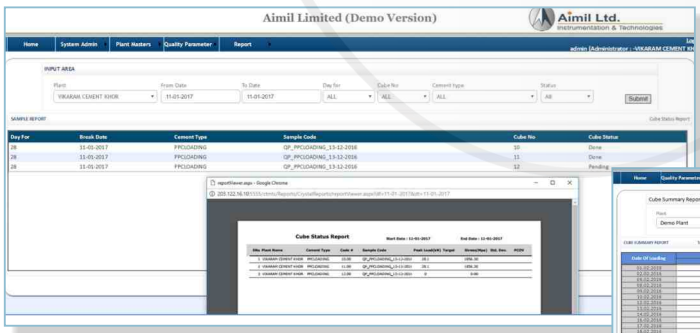
Aimil offers an Online LIMS - a software system which tracks samples, manages lab workflows, integrates directly with equipment and gives you a dashboard to track quality.



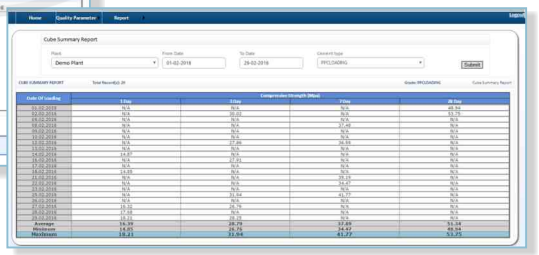
Dashboard



Test Scheduling

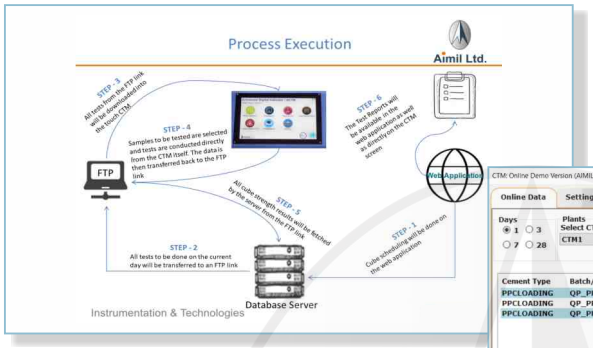


Dynamic Cube Status Report

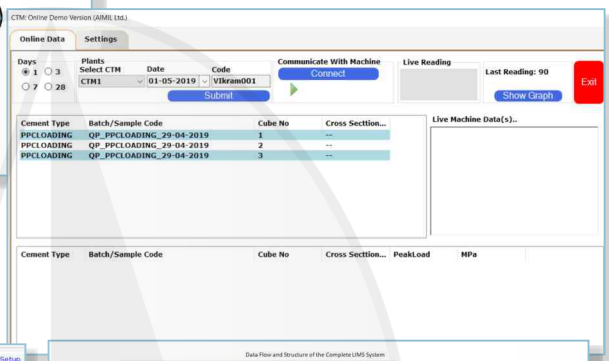


Dynamic Strength Reports (Max, Min and Avg.)

Concrete Testing

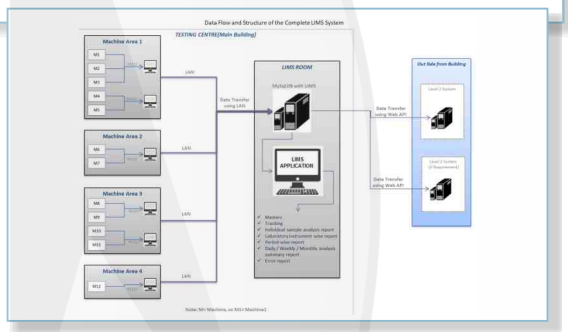


New Touch CTM with wifi- Process execution



Client Application Connected with the Centralized Server & fetching scheduled test list from server

Client Application with client define data sheet



How LIMS will work- Data Flow and Structure of the Complete LIMS System

Features:

- User access security
- Workflow automation
- Batch management
- Sample barcoding
- Job creation
- Equipment integration
- Immediate availability of data online
- Reporting and quality management
- Standard and configurable reports
- Report can be digitally signed
- Automatic graph generation
- Automatic calculation (formulae implemented in application)
- Data analysis using raw data
- Online/ offline mode
- Report export into excel/ pdf
- Centralized data storage
- Alerts (SMS/ Email)
- Multilocational capability
- Reports
- Test status report
- Pending sample report
- Completed test report
- Scheduled test report
- TAT report
- User performance
- Comprehensive date-wise, plant wise report
- Dynamic strength reports (max, min and avg.)
- Dynamic cube status report
- Daily cube status report
- Other datasheet according to the client/user etc…

Online Solutions

Custom Solutions

Aimil is perhaps the only instrumentation company in India with a 50 person strong in-house Product development team. Our in-house team includes highly trained and accomplished specialist teams. We have a full gamut of Software, Electronics and Mechanical Engineering Teams working on Product Development & Enhancement.. We are committed to delivering **International Quality At Indian Prices.**

In addition to the ability to fully automate systems as per customer requirements, two areas where we have done extensive work include **Servo Controlled Systems And Online Solutions**

Servo Controlled Systems

We specialize in producing customized servo controlled systems, Static or Dynamic for a variety of applications in Soil, Cement, Concrete, and Asphalt in addition to a variety of special applications in Structural Engineering.

Some features of the actuators used in our recent systems include:

- Control Rate : 0 – 10 Hz
  Amplitude vs. Frequency Chart to come here
- Strain Control :
  - On concrete and cement specimens at 0.025 mm / minute
- Full computer control of the system

Online Soutions

By leveraging our electronics and software capabilities we can extract the data /output from machines place on the internet allowing access remotely also These are some of the recent solutions which we have provided to customers around our Compression Testing Machines:

CASE 1

A client wanted to transport the data from our Aimil Horizon softwares running on an Aimil CTMs at various construction sites to their server in their head office, so that they could view all the data relating to cube breaking in real time and could see the data through their ERP which in this case was SAP.

We integrated the database of our machines with the SAP running on the client's server in their head office. Using the static IP internet connections at the client's sites, we were able to meet the client's requirements.

CASE 2

A key client of ours wanted a full online solution using which they could control and monitor compression testing process from their Head Office, being done with AIMIL Digital CTMs. They wanted a tamper-free system where data such as breaking strength, cube weight and temperature and humidity would be sent automatically.

The client also needed cube casting being centrally scheduled as well as data on cube weight and temperature and relative humidity being sent automatically.

To achieve this we developed customized hardware and software for the client. Two applications were developed. One for the client's various sites which was hosted locally on the Quality Laboratory's computer and linked via USB cable to the CTM's electronics. The other application was developed for the head office server. It was a web-based application which was completely integrated with the client's ERP.

All this data was integrated into their SQL and later Oracle head office servers

CASE 3

A client approached us with a problem where they needed a web-based system working in conjunction with our ACTM hardware but which needed a large degree of flexibility.

We developed a second ACTM software aside from our standard Horizon software to meet the challenge.

Consistency and Workability

Consistency is a general term related to the relative fluidity of the concrete. It is an indication of the amount of mixed water in relation to the amount of dry materials. Workability indicates whether or not concrete can be placed easily in some desired shape or location. To ensure that concrete achieves its maximum possible strength and yet retains its ease of placing on site, it is essential that the design of the concrete mix in relation to the water-cement ratio and workability is closely controlled.

Following are the methods for determining the consistency of concrete.

Slump Test

This test is considered suitable for cohesive and plastic mixes of concrete containing aggregate smaller than 50 mm.

Slump Test Apparatus

AIM 334

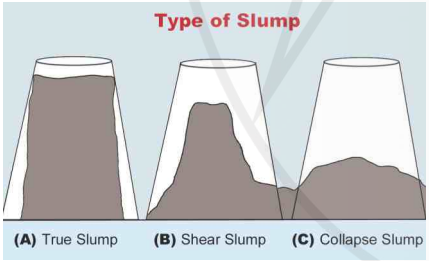
Ref. Standards IS:7320, BS:1881,

ASTM C 143, AASHTO T119

The slump cone having dimension as (ID-100mm at top ID-200mm at bottom & height 300mm) is filled with freshly mixed concrete and is tamped with a tamping rod in four layers. The top of the concrete is levelled off with the top of the slump cone, the cone is lifted vertically up and the slump of the sample is immediately measured.

- Base has cleats on its underside to help dig into the ground surface.
- Positive clamping of slump cone to the base while filling and tamping the concrete.
- A combination swivel carrying handle also serves as the datum making the conventional and somewhat awkward measuring procedure of using a foot rule and a datum bar, a thing of the past.

AIM 334



Degree of workability	Slump	Compacting factor
Very low	0 - 25 mm	0.75-0.80
Low	25 - 50 mm	0.80-0.85
Medium	50 - 1a00 mm	.085-0.92
High	100 - 150 mm	Above 0.92
Very High	Collapse	Not applicable

The equipment consist of the following replaceable parts :

AIM 33401	Slump Cone	1No.
AIM 33402	Base plate with swivel handle	1No.
AIM 345	Tamping rod steel, 16 mm dia x 600 mm length with ISI certification mark IS : 10086	1No.

Ordering Information :

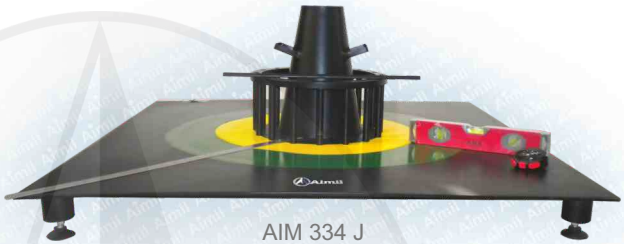
AIM 334	Slump Test Apparatus with testing rod & base plate

Self Consolidating Concrete (SCC) Flowability

These tests are used to determine the flowability and passing ability of Self-Consolidating Concrete (SCC) as defined in ASTM C1621. Passing ability refers to the ability of SCC, under its own weight (without vibration), to flow into and completely fill the spaces within an intricate framework, containing obstacles such as reinforcement bars.

J-Ring

AIM 334 J



AIM 334 J

Ref. Standards - ASTM C1621

This test method provides a procedure to determine the passing ability of self-consolidating concrete mixtures. The difference between the slump flow and J-Ring flow is an indication of the passing ability of the concrete. The test method is applicable for laboratory use in comparing the passing ability of different concrete mixture. It is also applicable in the field as a quality control test. It can also be used to investigate the resistance of SCC to segregation by comparing test results from two different portions of sample. The J-Ring test measures three parameters: flow spread, flow time and blocking step. The J-Ring flow spread indicates the restricted deformability of SCC due to blocking effect of reinforcement bars and the flow time indicates the rate of deformation within a defined flow distance. The blocking step quantifies the effect of blocking.

The equipment consist of the following replaceable parts :

AIM 334J01	Base plate of size 1000mm x 1000mm	1 No.
AIM 334J02	Slump cone (100mm ID at top x 200mm at bottom x 300mm height)	1 No.
AIM 334J03	Straight rod of at least one flat side with flexure less than 1mm	1 No.
AIM 334J04	Measuring scale 0-600mm	1 No.
AIM 334J05	Sprit level.	1 No.
AIM 334J06	Stop watch with accuracy of 0.1 second	1 No.

L-Box

AIM 334 L

Ref. Standards - EN 12350-10

L Box to investigating the flow rate and passing ability of SCC (self-consolidating concrete) in confined spaces. It measures the reached height of fresh SCC after passing through the specified gaps of steel bars flowing within a defined flow distance. With this reached height, the passing or blocking behavior of SCC can be estimated.

The equipment consist of the following replaceable parts :

AIM 334L01	L-Box with three smooth bars equally spaced and a gate	1 No.
AIM 334L02	Bucket capacity of 14 litre	1 No.
AIM 334J04	Measuring scale 0-600mm	1 No.
AIM 334J05	Spirit level	1 No.
AIM 334J06	Stop watch with accuracy of 0.1 second	1 No.

AIM 334 L

U-Box

AIM 334 U

The U Shape Box is used to determine the confined flowability and the capacity of SCC concrete to flow within confined space. The box is made of steel frame consisting of three bars.

In this test the degree of compatibility can be indicated by the height that the concrete reaches after flowing through an obstacle. The quality of the concrete can be judged by the height reached.

The equipment consist of the following replaceable parts :

AIM 334L02	Bucket capacity of 14 litres	1 No.
AIM 334J04	Measuring scale 0-600mm	1 No.
AIM 334J05	Sprit level	1 No.
AIM 334J06	Stopwatch with the accuracy 0.1 second	1 No.

AIM 334 U

V-Funnel

AIM 334 V

Ref. Standards - EN 12350-09

The V- Funnel flow time is the period a defined volume of SCC (self-consolidating concrete) needs to pass a narrow opening and gives an indication of the filling ability of SCC provided that blocking and or segregation do not take place, the flow time of the V-Funnel test is to some degree related to the plastic viscosity.

The equipment consist of the following replaceable parts :

AIM 334L02	Bucket capacity 14 litres	1 No.
AIM 334J05	Sprit level	1 No.
AIM 334J06	Stopwatch with accuracy 0.1 second	1 No.

(Can be supplied as per EFNARC standard)

AIM 334 V

Flow Table for Concrete

AIM 334 F-1

Ref. Standards - IS: 1199 (Part -II) Clause 4.7

Flow table is used to determine the flow of fresh mixed super plasticized concrete to high working. The slump cone is placed centrally on the table of to be held position by standing on the two foot pieces. A wooden tamping bar is provided for lightly tamping for each layer.

The equipment consist of the following replaceable parts :

AIM 334F01	Flow table (700mm x 700mm)	1 No.
AIM 334F02	Slump cone (130mm ID at top x 200mm ID at bottom x 200mm height)	1 No.
AIM 334F03	Wooden tamping bar	1 No.
AIM 334J04	Measuring scale 0-600mm	1 No.
AIM 334J06	Stopwatch with the accuracy 0.1 second	1 No.

334 F-1

AIM 334 F-2

Ref. Standards - IS: 1199 (Part -VI)

The equipment consist of the following replaceable parts :

AIM 334F04	Base plate (950mm x 950mm)	1 No.
AIM 334F02	Slump cone (130mm ID at top x 200mm ID at bottom x 200mm height)	1 No.
AIM 334F03	Wooden tamping bar	1 No.
AIM 334L02	Bucket capacity of 14 litres	1 No.
AIM 334J04	Measuring scale 0-600mm	1 No.
AIM 334J05	Sprit level	1 No.
AIM 334J06	Stopwatch with the accuracy 0.1 second	1 No.

Ordering Information :	
AIM 334 J	J-Ring
AIM 334 U	U-Box
AIM 334 L	L-Box
AIM 334 V	V-Funnel
AIM 334 F-1	Flow table for fresh concrete as per IS: 1199 (Part-II)
AIM 334 F-2	Flow table for self compacting concrete as per IS: 1199 (Part-VI)
AIM 334 FC	Flow cone & flow funnel with stand (Ref. Standards - ASTM C 939-97)

Consistency Test

This method is a mechanical variation of the simple slump test which includes determination of the workability of concrete. The concrete is formed in a slump cone positioned in a container and it is vibrated after removing the cone on a small vibrating table operating at a fixed amplitude and frequency.

A plastic spacer disc, in which, contact with the upper surface of the wet concrete guides the operator to judge when the compaction is complete. The time to complete the required vibrations gives an indication of the workability of concrete, which is expressed in Vee-Bee degrees.

Aimil Consistometer

AIM 335

Ref. Standards - IS:10510, IS:1199, BS 1881 (Part 104), AASHTO T126, EN. 12350-3

Consists of a vibrating table, specimen pot, slump cone, graduated rod and acrylic plate.
Suitable for operation on 415 V, 3 phase, 50 Hz, AC Supply.

Ordering Information :	
AIM 335	Aimil Consistometer

AIM 335

Flow Test

Ref. Standard - IS:1199, AASHTO T126

The Flow Table is designed for determining the workability of portland cement concrete.

Flow Table, Motorised

AIM 336

The Flow Table top is 76.2 cm dia, finely machined from a solid brass casting. The integrally cast ribs are designed for support and strength. The stand is fabricated of cast iron and is of sturdy construction. Holes for mounting on foundations are drilled in the base plate. The ground and hardened steel cam is designed to drop the table by 12.5 mm with an electric geared motor.

Complete with Flow mould 250mm base dia, 170mm top dia and 120mm high. The new design has better aesthetics and compact look.

suitable for operation with 220 volts, 50 Hz, single phase, AC Supply.

Ordering Information :	
AIM 336	Flow Table, Motorised

AIM 336

Compaction Factor

Compaction factor is the ratio of the weight of partially compacted concrete to the weight of the concrete when fully compacted in the same mould. The weight of partially compacted concrete in relation to its fully compacted state is a reasonably good indication of the workability of concrete.

AIM 337

Compaction Factor Apparatus

AIM 337

Ref. Standard IS:5515, IS 1199

A useful tool for determination of workability determination of concrete mixes of very low workability such as those normally used with concrete, compacted by vibration. Concrete mix having maximum size of aggregate not exceeding 38 mm, can be tested for workability.

Compaction Factor Apparatus is complete with hoppers and receiver assembly, AIM 345 Tamping Rod of 16 mm dia x 60 cm long having a Hooper and two trowels.

Ordering Information :	
AIM 337	Compaction Factor Apparatus

Setting Time By Penetration Resistance

The method as detailed in ASTM C403 and AASHTO T197 is for the determination of setting time of mortar fraction of concrete mixes. The hardening of concrete is a gradual process and any definition of setting time is arbitrary and the method is suitable only for mortar mixtures with a value greater than zero. The initial and final setting times are the periods starting from the time cement and water are mixed together until the penetration resistance is 35 kg/cm^2 and 280 kg/cm^2 respectively.

Concrete Penetrometer, Spring Type

AIM 338

AIM 338

Ref. Standard IS:8142, ASTM C 403

It consists of a cylindrical spring housing with a plunger attached to the top of the spring. Penetration needle is attached to the other end of the spring housing. The plunger is graduated in 1 kg divisions, to a maximum capacity of 60 kg, which can be read with respect to the top end of the spring housing. A set of six needle points with areas of 645, 323, 161, 65, 32 and 16 mm^2 are provided.

Supplied complete in a carrying case.

Ordering Information :	
AIM 338	Concrete Penetrometer, Spring Type

Bulk Density

AIM 339

Ref. Standard - IS:1199, IS:10079, BS:1881, EN1097-3, 12350-6

For determining the weight per cubic metre, of freshly mixed concrete. Formulae are provided for calculating the volume of concrete per batch, the yield per bag of cement and the cement factor.

Bulk Density Measures

Set of two, conforming to IS:1199 The Set comprises one each of :

AIM 33901 Bulk Density Measure, 20 litres.
AIM 33902 Bulk Density Measure, 10 litres.

Ordering Information :	
AIM 339	Bulk Density

Air Entrainment

Entrainment of a small amount of air in the cement/ concrete has been found to improve considerably the durability of concrete. The recommended limits specified for the air content are between 3% and 6.5%. Smaller percentages may result in deterioration taking place more quickly and larger percentages may reduce the strength without any improvement in the durability of concrete.

Further, when use of admixtures is made to increase workability of concrete, a check of the air content is required to ensure that the percentage of air remains between 1 to 2 % to get the optimum performance of the concrete structure. For determining these percentages, Air Entrainment Meter, as specified in IS:9799, is used.

Air Entrainment Meter

AIM 340, AIM 341 & AIM 342

Ref. Standard - IS:1199, IS:10079, BS:1881, EN 12350-7

It consists of a pressure-tight flanged cylindrical measuring bowl, fitted with a removeable flanged and a conical cover assembly with a seal in-between. The conical cover has an air valve and a pet cock for bleeding-off the water. A cylindrical stand pipe, which is graduated in per cent air content, is fixed on the conical cover assembly.

Required pressure is applied to the specimen with the help of a pressure bulb. The whole assembly is mounted on a flat base. Each apparatus is supplied complete with a calibrating cylinder, pressure gauge, funnel, trowel and tamping bar.

AIM 341

Ordering Information :	
AIM 340	Air Entrainment Meter, Capacity 0.005 m3 (5 litres), suitable for aggregate size upto 38 mm.
AIM 341	Air Entrainment Meter, Capacity 0.01 m3 (10 litres), suitable for aggregate size upto 75 mm.
AIM 342	Air Entrainment Meter, Capacity 0.1m (100 litres), suitable for aggregate size upto 150mm. Supplied with Foot Pump in place of Pressure Bulb as supplied with other models.

Mixing Equipment

For quality specimens to be manufactured efficient mixing of concrete, prior to moulding is essential. Mixing helps in coating the surface of all aggregate particles with cement paste and bring uniformity in the mixture .

We offer both Drum type and Pan type models of concrete mixture. They are suitable for mixing small quantities of concrete, generally used in the laboratories.

Concrete Mixer, Drum Type, Capacity 30L

AIM 9701

Ref. Standard - IS:1791:1985

The mixer consists of a steel vessel of 30 litres, mounted on a frame. The vessel is rotated at 20-24 RPM with the help of a motor and a pulling. The vessel can be tilted to any angle by a handle. This facilitates mixing and discharge. Blades are provided inside the vessel to mix the material thoroughly. The drum, handle and motor etc. are mounted on a steel frame. This model is provided with two large wheels for carting away.

Specifications :

Mixing Capacity	:	30 ltrs.
Overall Dimension	:	1195mm X 790mm X 1370mm
Motor	:	1 HP
Drum RPM	:	24 RPM

Special Features :

- Simple to clean & maintain.
- Easy to operate.

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

AIM 9701

Concrete Mixer, Pan Type, Capacity 40L

AIM 9891

Ref. Standard - IS:1791:1985

The Concrete Mixer has been designed for mixing small quantities of concrete used in preparation of concrete cubes, for testing in laboratories. The purpose of the mixer is to smear mechanically the aggregate surface with cement paste uniformly & produce a mix of uniform consistency. This in turn gives consistent quality of cube specimens when casted in the moulds.

The Concrete Mixer developed is transportable on wheels. The design of mixing paddles ensure uniform & efficient mixing of cement & aggregate both in dry & wet conditions. This machine is suitable for aggregate size upto 20mm. The equipment can also be put to use for mixing of any other material in dry / wet conditions. The arrangement helps the operators to access the pan contents conveniently & emptying the mixture after completion of the operation. The drum is driven off the ribbed base. The lid with mixing paddles clears off the top of the drum to provide maximum access to the operator.

Specifications :

Mixing Capacity	:	40 ltrs.
Overall Dimension	:	910mm X 875 mm X 1250mm
Motor	:	2 HP
Drum RPM	:	24 RPM

Special Features :

- Portable & Compact.
- Adjustable Blades.
- Simple to clean & maintain.
- Easy to operate.

Suitable for operation on 440V, 50Hz, Three Phase, AC supply.

AIM 9891

Concrete Pan Mixer, Capacity 100L

with Hydraulic Arrangement for tilting the drum

AIM 951-2

Ref Std.: IS: 1791:1985

The Concrete Pan Mixer has been designed for mixing small quantities of concrete used in preparation of concrete cubes, for testing in laboratories. The purpose of the mixer is to smear mechanically the aggregate surface with cement paste uniformly & produce a mix of uniform consistency. This in turn gives consistent quality of cube specimens when casted in the moulds.

The Concrete Pan Mixer (Tilting type) developed is transportable on wheels. The design of mixing paddles ensure uniform & efficient mixing of cement & aggregate both in dry & wet conditions. This machine is suitable for aggregate size upto 20mm. The equipment can also be put to use for mixing of any other material in dry & wet conditions. The arrangement helps the operators to access the pan contents conveniently & emptying the mixture after completion of the operation.

The pan is made of heavy duty abrasion resistance metal with 10 mm thick bottom & 8 mm thick side wall. The drum is driven off the ribbed base. The lid with mixing paddles clears off the top of the drum to provide maximum access to the operator.

Special Features :

- Simple to clean & maintain
- Virtually Noise free (Very low noise) while running on full capacity
- Normal vibration
- Easy to operate

Suitable for operation on 440V, 50Hz, Three Phase, AC supply.

AIM 951-2

Mixer Specification

	AIM-951-1	AIM-951-2	AIM-951-3
Concrete Mixer Capacity	80 ltrs	100 ltrs	60 ltrs
Weight (including hydraulic P.Pack with hydraulic oil)	1000kg (Appx)	1075kg (Appx)	650 kg (Appx)
Dimensions of Mixer	2100(L) x 1250(W) x 1400(H)	2100(L) x 1250(W) x 1450 (H)	2100(L) x 1275(W) x 1450(H)
Dimensions of Hydraulic Power Pack	650(L) x 500(W) x 850(H)	650(L) x 500(W) x 850(H)	650(L) x 500(W) x 850(H)
Motor Capacity for mixing Drum	5HP	5HP	3HP
Motor Capacity for Hydraulic P.Pack	2HP	2HP	1HP
Power Supply for Conrete mixture	415V, 3 Phase, 50 Hz. AC supply	415V, 3 Phase, 50 Hz. AC supply	415V, 3 Phase, 50 Hz. AC supply
Power Supply for Power Pack	230V, 1 Phase, 50Hz. AC supply	230V, 1 Phase, 50Hz. AC supply	230V, 1 Phase, 50Hz. AC supply
Direction Control Valve of P.Pack	230V, 1 Phase, 50Hz. AC supply	230V, 1 Phase, 50Hz. AC supply	230V, 1 Phase, 50Hz. AC supply
RPM of Mixture Drum	24	24	24

Ordering Information :	
AIM 9701	Concrete Mixer, Drum Type, Capacity 30 Litre
AIM 9891	Concrete Mixer, Pan Type, Capacity 40 L with Manual Arrangement for tilting the drum
AIM 9891-1	Concrete Mixer, Pan Type, Capacity 40 L with Hydraulic Arrangement for tilting the drum
AIM 9891-R	Concrete Mixer, Pan Type, Capacity 40 L, Rotating Blade Type
AIM-951-1	Concrete Mixer, Pan Type, Capacity 80 L with Hydraulic Arrangement for tilting the drum
AIM-951-1-R	Concrete Mixer, Pan Type, Capacity 80 L, Rotating Blade Type
AIM-951-2	Concrete Mixer, Pan Type, Capacity 100 L, with Hydraulic Arrangement for tilting the drum
AIM-951-2-R	Concrete Mixer, Pan Type, Capacity 100 L, Rotating Blade Type
AIM-951-3	Concrete Mixer, Pan Type, Capacity 60 L, with Hydraulic Arrangement for tilting the drum
AIM-951-3-R	Concrete Mixer, Pan Type, Capacity 60 L, Rotating Blade Type
AIM-951-150	Concrete Mixer, Pan Type, Capacity 150 L, Rotating Blade Type

Closed Chamber Concrete Mixer for Concrete Carbon Treatment

AIM-951-3-S2

The Carbon Treatment Facility for Concrete is an advanced experimental setup designed for the Department of Civil Engineering at IIT Ropar. This facility is developed to mix and cure concrete in a carbonated environment, enhancing research and testing capabilities for sustainable construction practices. The Closed Chamber Concrete Mixer is a critical component of this setup, ensuring precise and efficient mixing of concrete under controlled conditions.

Features

- Capacity: Handles concrete mix up to 60 kg, ensuring uniform mixing of all ingredients.
- Rotating Chamber: The chamber rotates along the vertical axis and can tilt up to 30˚ for proper mixing.
- Detachable Bottom: For easy cleaning after mixing.
- Leakage Proof: The mixer chamber is gas and water leakage-proof, operating up to 5 bar of chamber pressure.
- Controlled Inlet Ports: For gas (CO_2) & liquid (Water, NaOH, etc.).
- CO_2 Pressure Sensor: Includes a controlled gas outlet port for the release of gas as needed, with meters to quantify ingoing and outgoing CO_2.
- Optional Features: A meter to note drum rotation speed, number of rotations, and duration.

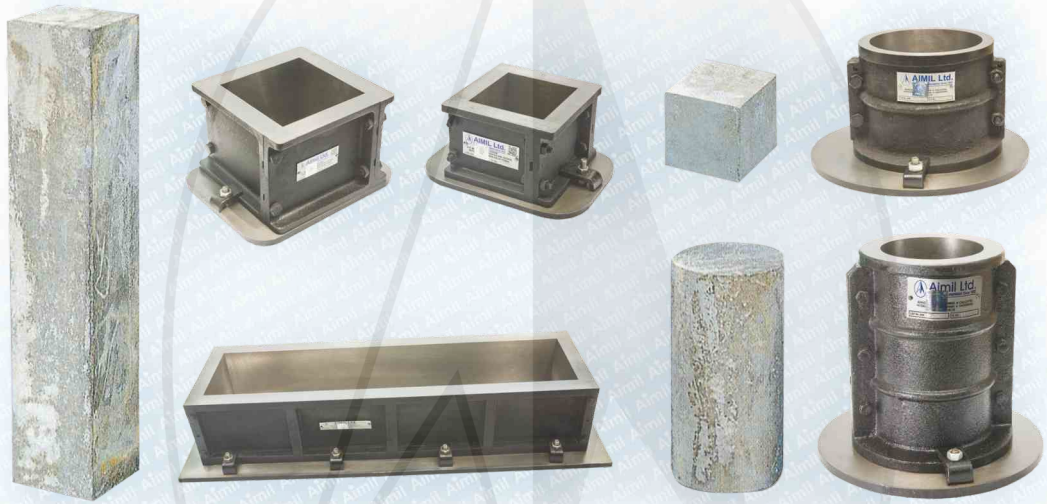
Technical Specifications

- Mixing Capacity: Up to 60 kg
- Chamber Rotation: Vertical axis rotation with 30˚ tilt capability
- Detachable Bottom: For easy cleaning
- Pressure Handling: Operates up to 5 bar of chamber pressure
- Inlet Ports: Controlled for gas and liquid inputs
- CO_2 Sensor and Outlet: CO_2 pressure sensor with controlled gas outlet port
- Optional Meter: For drum rotation speed, number of rotations, and duration
- Operation: 440V, 50Hz, Three Phase, AC supply

Ordering Information :	
AIM-951-3-S2	Closed Chamber Concrete Mixer for Concrete Carbon Treatment

Moulding

International specifications for concrete strength testing require test specimens to be cast in a number of standard sizes for compression and flexural strength determination.
Aimil moulds are made of high quality metal and are strong enough to resist distortion and retain their shape and size under rugged conditions. These moulds are given internal surface finish of a very high order, to comply with requirements laid down in IS:10086, BS:1881, ASTM C31 and ASTM C192, EN 12390-6-2
The design is such that during dismantling and re-assembly, these moulds attain accuracy of alignment.
Aimil offers Cube Moulds, Cylindrical Moulds and Beam Moulds of various sizes as listed below :



Moulds

Cube Moulds

AIM 343 & AIM 344

Ref. : IS: 10086
Four standard sizes of cube moulds are offered and supplied complete with base plate.

Ordering Information :	
AIM 343	Cube Mould 100x100x100mm ,Cast Iron with IS:10086 Certification Mark
AIM 344	Cube Mould 150x150x150mm ,Cast Iron with IS:10086 Certification Mark
AIM 344-PU	Cube Mould 150 x 150X150mm, Polyurethane
AIM 344-ABS	Cube Mould 150 x 150X150mm, ABS plastic
Optional Accessories :	
AIM 345	Tamping Rod, Steel, 16 mm dia x 600 mm length rounded at the lower end for use with Cube and Cylindrical Moulds.

Note:
- Cube moulds of 200mm & 300mm available on request, subject to minimum order quantity.
- Plastic Cube moulds of 150mm available on request, subject to minimum order quantity.

Beam Moulds

AIM 346 & AIM 347

Ref. : IS: 10086, EN 12390-1-2

Two standard sizes of beam moulds are offered for casting concrete specimens for flexural strength testing. These moulds are made of steel and are supplied complete with a base plate.

Ordering Information :	
AIM 346	Beam Mould 100 mm x 100 mm x 500 mm size
AIM 347	Beam Mould 150 mm x 150 mm x 700 mm size
Optional Accessories :	
AIM 348	Tamping Bar, Steel, 25 mm x 25 mm square ramming face, 300 mm long, 2kg in weight for use with Beam Moulds.

Cylindrical Moulds

AIM 349, AIM 350, AIM 351, AIM 352 & AIM 354

Ref. : IS: 10086

Moulds for testing concrete cylinders for compressive strength testing are offered in different sizes. These moulds are made of cast iron and split into two parts longitudinally. These are supplied complete with a base plate and top plate, and meet the requirements of IS:10086 and other international standards, EN 12390-1-2

Ordering Information :	
AIM 349	Cylindrical Mould, Cast Iron, Split length wise 150 mm dia x 300 mm high, with IS:10086 Certification Mark
AIM 350	Cylindrical Mould, Cast Iron, Split length wise 100 mm dia x 200 mm high
AIM 351	Cylindrical Mould, Cast Iron, Split length wise 100 mm dia x 100 mm high
AIM 352	Cylindrical Mould, Cast Iron, Split length wise 150 mm dia x 150 mm high
AIM 354	Cylindrical Mould, Cast Iron, Split length wise 300 mm dia x 300 mm high

Curing

AIM 355-1, AIM 355-2, AIM 355-3, AIM 355-4, AIM 355-1 ACW, AIM 355-2 ACW, AIM 355-1 ACB, AIM 355-2 ACB, AIM 355-1 ACB-C & AIM 355-2 ACB-C

The tank has been designed to accommodate 150 mm/70.6 mm casted cubes upto 36/144 cubes and fully insulated, complete with a hinged lid, heater, thermostat and recirculation pump. Provision of two removeable racks allowing free circulation of water around each cube. The pump, drain valves and electrical equipment are housed in a compartment located at one end of the tank.

AIM 355-1 ACB

Specification of Curing Tanks

Cat. No.	Heater Specification							
	SS Trays	Cube Specimen		Cube with mould 150mm	Size of Chamber LxBxH	Power (KW)	Operating Voltage V	Current Rating (A)
		150mm	70.6mm					
AIM-355-1	1	6	24	-	22”x15”x13”	3.0	220	17.0
AIM-355-2	2	12	48	-	22”x15”x20”	4.0	220	17.0
AIM-355-3	2	24	96	-	29”x22”x20”	4.5	440	19.0
AIM-355-4	2	36	144	-	43”x22”x20”	6.0	440	25.5
AIM-355-1-ACB	1	-	-	06	40”x22”x20”	6.0	440	25.5
AIM-355-2-ACB	2	-	-	12	40”x22”x28”	9.0	440	38.0
AIM-355-1-ACW	1	-	-	06	40”x22”x15”	6.0	440	19.0
AIM-355-2-ACW	2	-	-	12	40”x22”x24”	6.0	440	25.5
***AIM 355-1 ACB-C**	1	-	-	6	40”x22”x20”	6.0	440	22.0
***AIM 355-2 ACB-C**	2	-	-	12	40”x22”x30”	9.0	440	30.0

***Note:** Supplied with 1.5 Ton capacity compressor - 1No.

Ordering Information :	
Temp. Range : Ambient +5° C to 100± 2° C	
Curing Tank:	
AIM 355-1	Curing Tank for 6/24 cubes of 150 mm/ 70.6 mm size
AIM 355-2	Curing Tank for 12/48 cubes of 150 mm/70.6 mm size
AIM 355-3	Curing Tank for 24/96 cubes of 150 mm/70.6 mm size
AIM 355-4	Curing Tank for 36/144 cubes of 150 mm/ 70.6 mm size
Accelerated curing (for warm water method)	
Temp. Range : Ambient +5° C to 55 ± 2° C.	
AIM 355-1 ACW	Accelerated curing Tank for 6 moulds of 150 mm size
AIM 355-2 ACW	Accelerated curing Tank for 12 moulds of 150mm size

Accelerated curing (for boiling water method)	
Temp. Range : Ambient +5° C to 100± 2° C.	
AIM 355-1 ACB	Accelerated curing Tank for 6 moulds of 150 mm size.
AIM 355-2 ACB	Accelerated curing Tank for 12 moulds of 150mm size
Accelerated curing (for cooling and boiling water method)	
Temp. Range : 10°C to 100°C	
AIM 355-1 ACB-C	Curing Tank for 6 moulds of 150 mm, 10°C to 100°C (with cooling & heating system)
AIM 355-2 ACB-C	Curing Tank for 12 moulds of 150 mm, 10°C to 100°C (with cooling & heating system)

Note: For applications in the Cement plants, cooling-cum-heating type humidity chamber are only recommended.

Vibratory Hammer for Concrete Moulds

AIM 356

Used for the compaction of concrete samples in a mould. Generally the Vibratory Hammer is found to be a much faster & quicker method as compared to impact hammering.

The equipment consist of the following replaceable parts:

AIM 35601 Tamping foot 148mm dia

AIM 35602 Tamping foot 148mm x 148mm square

Ordering Information :	
AIM 356	Vibratory Hammer for Concrete Moulds
Optional Accessories :	
AIM 35603	Tamping foot 98mm dia
AIM 35604	Tamping foot 98mm x 98mm square

AIM 356

Capping

Cylindrical Specimen Capping Equipment

AIM 357 & AIM 358

AIM 357

Ref. Standards - IS:516, BS:1881, ASTM C31, ASTM C617

It is essential that the ends of the concrete cylinder specimens are flat and parallel when conducting a compressive strength test. If it is not so, the end surfaces are required to be capped with capping compound, using capping sets to obtain these conditions. These capping sets are for use in the field and in the laboratory.

The vertical capping set comprises of a base with an upright, which serves as a guide for positioning the capping plate and a cylinder. Precisely machined capping plate is for keeping molten compound and to position the cylinder. Supplied complete with a cylinder carrier and a laddle.

Ordering Information :	
AIM 357	Capping Set, Vertical, for Capping 150 mm dia Cylinders and Cores.
AIM 358	Capping Set, Vertical, for Capping 100 mm dia Cylinders and Cores
Optional Accessories :	
AIM 359	Capping Mould, for Capping 150 mm dia Concrete Cylinders
AIM 35701	Capping Compound, Pack of 5 kg, for capping the ends of the Concrete Test Cylinders
AIM 35702	Warmer, for melting the capping compound. Consists of an electrically heated bath with a temperature regulator. Complete with a cover and carrying handle.
Suitable for operation on 220V, 50Hz, Single phase, AC supply.	
AIM 35703	Bowl, Metallic bowl for carrying the capping compound
AIM 35704	Laddle, Metallic laddle for pouring the molten capping compound into the grooves between the cylinder and the capping plate

Cylinder Capping Set

AIM 357-2

Ref. Standard ASTM C31, ASTM C192, ASTM C617, AASHTO T231, ASTM T126

This set consists of a complete selection of equipment for capping 152mm diameter by 300mm long concrete specimens.

Set Includes:

Cylinder Capper (152 mm)	1 No.
Warming Pot	1 No.
Capping Ladle	1 No.
Box. Flake Capping Compound	1 No.
Cylinder Carrier	1 No.

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

Ordering Information :	
AIM 357-2	Cylinder Capping Set

Buoyancy Balance

AIM 9933

The Density of Hardened concrete specimens like Cubes & Cylinders can be quickly & accurately checked using Buoyancy Balance. The Buoyancy Balance consists of a rigid support Frame , incorporating a Water Tank ,mounted on a platform. A mechanical lifting device is used to raise the Water Tank thru the Frame height immersing the specimen suspended below the balance .The Balance supplied may also be used as a standard weighing system in the laboratory .

Buoyancy Balance—15 kg x 0.5g with NABL Certification

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

Ordering Information :	
AIM 9933	Buoyancy Balance

AIM 9933

Vibratory Compaction

Vibrating Table

AIM 364, AIM 365-1, AIM 365-2, AIM 366-1 & AIM 367-1

AIM 365-2

AIM 365-1

AIM 367-1

Ref. : EN 12350-6, 7, 12390-2, 13286-50

Proper compaction of cement concrete while casting specimens for compression testing is essential to achieve higher compressive strength .
AIMIL Vibrating Table is ideally suited for this purpose. The table top is suitable to hold cube moulds and has stops along its edges to prevent moulds from sliding off the table during operation.

The specially designed vibro motor for operating the vibrator.

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

Ordering Information :	
AIM 364	Vibrating Table, Table top 75cm x 75cm for 06 (approx.) moulds of 150mm cube
AIM 365-1	Vibrating Table, Table top 50cm x 50cm for 04 (approx.) moulds of 150mm cube
AIM 365-2	Vibrating Table, Table top 15cm x 15cm for single mould of 150mm cube
AIM 366-1	Vibrating Table, Table top 2m x 1m for 24 (approx.) moulds of 150mm cube
AIM 367-1	Vibrating Table, Table top 1m x 1m for 12 (approx.) moulds of 150mm cube

Sample Collection

Core Case

AIM 368

AIM 368

Core Case is the first innovation in Concrete core drilling. Connected to the core drill assembly with a flexible rubber coupling, the heavy duty, hand held, rotary drill easily produces cores upto 100 mm in dia without the use of cumbersome frame and feed.

The Water Jacket surrounding the core barrel is flanged, enabling it to be clamped to the surface to be drilled. For added support, clamping pliers and anchors are supplied. A rubber O-Ring fitted with the flange seals the water jacket core barrel assembly against concrete surface, enabling the return flushing water containing the cuttings to be hosed away from the drill site.

Water is fed into the upper water jacket nipple, from there the water flows, through a manifold, into the drill spindle and continues to the inside of the diamond core bit. A steady feed pressure can be maintained on the drill bit by turning the capstan wheel with one hand, while holding the electric drill steady on the coupling with the other. The drill feed assembly, common to all models, makes the system adaptable to all core diameters with additional conversion kit. Core Case is a completely portable, self-contained system, easily carried by a person in a standard brief case.

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

The equipment consist of the following replaceable parts :

AIM 36819	Electrical drill for core case	1 No.
AIM 36807	Feed Assembly	1 No.
AIM 36813	Hammer drill 8 mm	1 No.
AIM 36816	Anchor bolts (Pack of 50 Nos.)	1 Set
AIM 36817	Rubber coupling for core case	2 Nos.
AIM 36820	Clamp for holding water jacket (Set of 2 Nos.)	1set
AIM 36823	Nut & bolts (Set of 20 Nos.)	1set

Note: Core Case is not supplied with any bit or water jacket. Core Bits and Water Jackets are to be ordered separately, as required.

Ordering Information :	
AIM 368	Core Case
Optional Accessories :	
Core Bits with the Water Jacket are offered in the following sizes :	
AIM 36801	Core Bit and Water Jacket 25 mm dia x 75 mm long
AIM 36802	Core Bit and Water Jacket 38 mm dia x 100 mm long
AIM 36803	Core Bit and Water Jacket 50 mm dia x 100 mm long
AIM 36804	Core Bit and Water Jacket 75 mm dia x 100 mm long
AIM 36810	Core Bit 50 mm dia x 200 mm long
AIM 36811	Core Bit 75 mm dia x 200 mm long

Note: To obtain 200 mm long Core Samples, Core Bit of 100 mm length of the corresponding dia should be used first and replaced with 200 mm long Core Bit in the same Water Jacket to advance the core length.

Caution :

1. Coring cannot be done if reinforcement steel is encountered, which should be located using suitable techniques and avoided.
2. Core bits larger than 50mm dia may be avoided if concrete with strength M40 is encountered, as this may overload the motor and damage the bit.

Core Drilling

Pavement Core Drilling Machine

AIM 551-1

Ref. EN 12504-1

The Pavement Core drilling machine, petrol engine powered road building drill has been designed specifically for the purpose of drilling test cores from or holes in roads, airport runways, bridges.

The Machine comprises of two vertical support columns which carry the drill head/engine assembly accurately with the help of screwed spindle.

The 6HP petrol engine with pulley mechanism works with minimum vibrations. The double precision bit advances with screwed spindle which provides a constant, accurate drill pressure, minimum core chipping & long bit life.

The complete assembly is supplied on a rigid metal base with leveling facility and is suitable for vertically down coring applications only.

Bit diameter	:	150mm
Maximum depth of core	:	400mm
Drill Speed	:	1100rpm
Drive	:	6HP Petrol Engine
Guide Shafts	:	40mm dia
Screwed Spindle	:	20mm dia
Water Tap	:	12mm

AIM 551-1

Ordering Information :	
AIM 551-1	Pavement Core Drilling Machine
Optional Accessories :	
AIM-55101-1C	Diamond Core Bit, 50mm dia x 200mm long
AIM-55103-1C	Diamond Core Bits, 50mm dia x 400 long
AIM-55105-1C	Diamond Core Bit, 75mm dia x 200 long
AIM-55107-1C	Diamond Core Bit, 75mm dia x 400 long
AIM-55108-1C	Diamond Core Bit, 100mm dia x 400 long
AIM-55109-1C	Diamond Core Bit, 100mm dia x 200 long
AIM-55114-1C	Diamond Core Bit, 150mm dia x 200 long
AIM-55115-1C	Daimond Core Bit, 150mm dia x 400 long

Note 1: Standard Diamond core bit is suitable for taking out core from Plain Concrete, Asphalt Surface/ Block.
Note 2: Hilti Make core bit is supplied for taking out core from Reinforced Concrete Surface/ Block.
Note 3: Continuous supply of water is essential for smooth functioning of the machine.

Tests on Hardened Concrete

Demountable Mechanical Strain Gauges

AIM 369, AIM 369-DG, AIM 370, AIM 370-DG, AIM 371, AIM 371-DG

Strain Measurement

- Suitable for use on a loading member under adverse conditions
- Demountable measuring head
- Portable
- High accuracy
- Reference Test Bar incorporated

These are designed for gauge lengths of 100, 150 or 200 mm of the reference pins.
Supplied complete with AIM 070 dial gauge 0.002×5mm or AIM 072-DG Dial gauge Digital 0.001×25 mm. Complete in a case.

AIM 370-DG

Ordering Information :	
AIM 369	Demountable Mechanical Strain Gauge, 100 mm, Analogue
AIM 369-DG	Demountable Mechanical Strain Gauge, 100 mm, Digital
AIM 370	Demountable Mechanical Strain Gauge, 150 mm, Analogue
AIM 370-DG	Demountable Mechanical Strain Gauge, 150 mm, Digital
AIM 371	Demountable Mechanical Strain Gauge, 200 mm, Analogue
AIM 371-DG	Demountable Mechanical Strain Gauge, 200 mm, Digital
Optional Accessories :	
AIM 36901	Reference Pins, pack of 100, for use with any of the above
AIM 070	Dial Gauge, 0.002x5mm
AIM 072-DG	Digital Dial Gauge, 0.001x25mm

Modulus of Elasticity

Longitudinal Compressometer

AIM 372 & AIM 372-DG

Ref. : ASTM-C469

This apparatus is used for determination of the strain and deformation characteristics of cement concrete cylindrical specimens of 150 mm dia x 300 mm length.

The Compressometer consists of two frames for clamping to the specimen by means of five tightening screws with hardened and tapered ends. Two spacers hold the two frames in position. An adjustable pivot rod rests on pivot screws.

A spring enables the pivot rod to remain in contact with pivot screws. The ball chain is for adjusting the tension of the spring. A dial gauge, fixed to a bracket, fitted to the top frame, is used for taking deformation measurement. Supplied complete with AIM 070 dial gauge 0.002×5mm or AIM 072-DG Dial Gauge Digital 0.001×25 mm.

AIM 372-DG

Ordering Information :	
AIM 372	Longitudinal Compressometer, Analogue
AIM 372-DG	Longitudinal Compressometer, Digital

Note: • Longitudinal Compressometer for 100mm dia cylindrical samples can be provided on request.
• We do not supply Longitudinal Compressometer for cubical samples.

Lateral Extensometer

AIM 373 & AIM 373-DG

Ref. : ASTM-C469
This equipment is for the determination of lateral extension of 150 mm dia x 300 mm high cement concrete cylinders while testing them in compression.
The extensometer consists of two movable frames pivoted at one end. A dial gauge measures the lateral extension, and a removable spacer strip is for the initial setting of the dial gauge. Mounting of extensometer on the specimen is with the help of screws.
Supplied complete with AIM 070 dial gauge 0.002×5mm or AIM 072-DG dial gauge digital 0.001×25 mm.

AIM 373

AIM 373-DG

Ordering Information :	
AIM 373	Lateral Extensometer, Analogue
AIM 373-DG	Lateral Extensometer, Digital

Note: • Lateral Extensometer for 100mm dia cylindrical samples can be provided on request.
• We do not supply Lateral Extensometer for cubical samples.

Compressometer with Extensometer

AIM 373-DG-1

This equipment is used to determine longitudinal compression & lateral extension simultaneously of 150mm dia. x 300mm high cement concrete cylinders while testing them in compression.

The equipment consists of :
A) Two frames for measuring axial deformation
B) Two movable frames pivoted at one end for measuring lateral deformation

Supplied complete with two digital dial gauge 25mm (AIM 072-DG 0.001)

Ordering Information :	
AIM 373-DG-1	Digital Compressometer with Extensometer

Note: AIM 070 Analogue dial gauge 0.002 x 5mm can be provided on request

Drying, Shrinkage and Moisture Movement

Ref. Standards IS:4031, IS:9459, ASTM C490 and BS:1881, EN-1367-4
For determination of change in size of a concrete or cement sample, brought about by a change in moisture content, following apparatus has been designed.
Tests can be performed on freshly made specimens or specimens taken from existing structures.

Length Comparator

AIM 374-1 & AIM 374-1 DG

The apparatus can be used for three basic tests :
Initial drying shrinkage
The difference between the length of the cured specimen and the length when it is dried
Drying shrinkage
The difference between the length of the specimen from existing structure and its length when completely dried
Moisture movement
The difference between the length of the dried specimen and its length when again saturated with water

AIM 374-1 DG

The equipment consist of the following replaceable parts :

AIM 37401 Length Comparator Frame
AIM 37404 Reference Bar
AIM 072-DG Digital Dial Gauge 0-25mm x 0.001mm

Ordering Information :	
AIM 374-1	Length Comparator, Analogue
AIM 374-1-DG	Length Comparator, Digital

Volume Change Apparatus

AIM 375

Ref. Standard : ASTM - C490
This apparatus is used for determining the volume change of cement / concrete.

The equipment consist of the following replaceable parts:

AIM 37501-3 Prism Mould 100 x 100 x 250 mm effective gauge length
AIM 374-1-DG Length Comparator, Digital

Ordering Information :	
AIM 375	Volume Change Apparatus, Digital

AIM 375

Prism Mould

Two standard size of Prism Mould are offered for casting cement/ concrete speceimen for testing volume change with effective gauge length 250mm (Distance between the innermost points of the reference points) complete with base plate and two reference points of standard length.

Ordering Information :	
AIM 376	Prism Mould 75mm x 75mm x 250 mm effective gauge length
AIM 37501-3	Prism Mould 100 x 100 x 250 mm effective gauge length

Concrete Permeability

The design of concrete mix aims at maximum durability for the conditions prevailing at the site where it is to be used. ability to resist the flow of water through, is one of the important durability characteristics. The permeability is determined on cement. mortar and concrete specimens, either cast in the laboratory or obtained by cutting out cores from existing structures.

The Permeability test is carried out as per the standard IS:3085 and US Bureau of Reclamation.

Concrete Permeability Apparatus

AIM 379, AIM 380, AIM 381, AIM 382-3, & AIM 384

High Pressure Permeability Test can be conducted on different size specimens using different cells. Each cell is made of steel and provided with a top plate and funnel at the bottom having gasket seals held in position through bolts and nuts. The concrete specimens are sealed in the cells to prevent any leakage along the side walls. The permeated water is collected in glass bottles attached at the bottom. Each test has its own control valves. The control valves are mounted on a sturdy welded structural stand. Each unit is provided with chamber pressure gauges of 0-21 kg/cm^2 and test pressure gauge of 0-17.5kg/cm^2. Pressures are applied using any available pressure line at the site from a compressor.

AIM 382-3

AIM 384

Concrete Permeability Apparatus

Cat.	Ref Standard	No. of Cells	Specimen	Size	Optional Extras
AIM 379		Three	Cube	100 mm Cube	AIM 343 Mould Cast Iron for 100 mm Cubes
AIM 380	IS:3085	Three	Cylinder	100 mm dia	AIM 351 Cylindrical mould, Cast Iron, split 100 mm high lengthwise for 100 mm dia x 100 mm high specimens
AIM 381		Three	Cube	150 mm Cube	AIM 344 Mould, Cast Iron for 150 mm Cube
AIM 382-3	IS:3085	Three	Cylinder	150 mm Dia	AIM 352 Cylindrical Mould, 150mm dia x 150mm long, Cast Iron

Concrete Impermeability Apparatus

AIM 384	DIN Standard 1048	Three	Cube	150 mm Cube	AIM 344 Mould, Cast Iron for 150 mm Cube.

Ordering Information :

AIM 379	Concrete Permeability Apparatus, 3 cell model for 100 mm cube, testing pressure 15kg/cm^2
AIM 380	Concrete Permeability Apparatus, 3 cell model for 100 mm cylinder, testing pressure 15kg/cm^2
AIM 381	Concrete Permeability Apparatus, 3 cell model for 150 mm cube, testing pressure 15kg/cm^2
AIM 382-3	Concrete Permeability Apparatus, 3 cell model for 150 mm cylinder, testing pressure 15kg/cm^2
AIM 384	Concrete Impermeability Apparatus, 3 cell model for 150 mm cube as per DIN Std., testing pressure 15kg/cm^2
Optional Accessories	
AIM 38104	Compressor 15kg/cm^2 (working pressure)
AIM 38106	Compressor 7kg/cm^2 (working pressure)

Note:
- The Compressor is not supplied as a part of the outfit.
- Concrete Permeability Apparatus with other size samples can be supplied on request

Concrete Water Permeability Tester

AIM 384-2

The Concrete Water Permeability Tester is designed for lake and soil impermeability tests and determining impermeability grades. It is also suitable for permeability measurements and quality checks of building materials, making it widely applicable in production, construction, design, teaching, and research. This apparatus features automated boost and testing, with pressure displayed through a pressure sensor on the display device.

Features
- Automated boost and testing via microcomputer control
- Pressure display through a pressure sensor
- Suitable for cubic, cylindrical, or prismatic specimens
- Maximum specimen dimensions of 150x150x150 mm
- Can be used for various construction materials
- Stainless steel plate for durability
- Manometer for constant pressure monitoring

Specifications
- Working Pressure: 4 MPa/cm²
- Number of Specimens: 6 pcs
- Working Method: Microcomputer automatic pressurization
- Motor Power: 90 W / 120 W
- Motor Speed: 1400 r/min
- Voltage: 220 V / 380 V, 50 Hz
- Overall Dimensions: 1230×745×1265 mm
- Weight: 200 kg / 250 kg

AIM 384-2

Ordering Information :

AIM 384-2	Concrete Water Permeability Tester

Concrete Test Hammer

AIM 388 & AIM 388-1

Ref. Std. : IS 13311 - 1992 (Part 2) & ASTM C805, D5873

The concrete test hammer is an instrument used for the non destructive testing of concrete. It allows one to have a quick estimate of the strength of concrete. Since it simply gives an indication based on surface properties.

Hammers are available in two measuring range

1) • Measuring Range : 10 to 70 N/mm^2 • Impact energy : 2.207Nm.
2) • Measuring Range : 5 to 120 N/mm^2 • Impact energy : 2.207Nm.

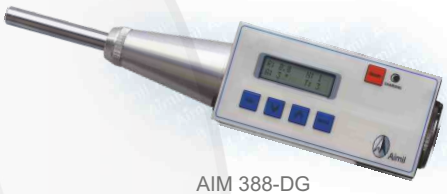
AIM 388

Ordering Information :

AIM 388	Analogue Concrete Test Hammer measuring range 10 to 70 N/mm^2 with NCCBM certificate
AIM 388-1	Analogue Concrete Test Hammer measuring range 5 to 120 N/mm^2

Digital Concrete Test Hammer

AIM 388-DG



AIM 388-DG

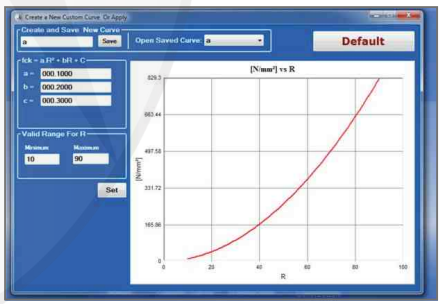
Ref. Std. : IS 13311 - 1992 (Part 2) & ASTM C805, D5873

The Digital concrete test hammer is an instrument used for the non destructive testing of concrete. It allows one to have a quick estimate of the strength of concrete, since it simply gives an indication based on surface properties.

The display shows the angle of impact, allowing the user to change the angle to match the desired impact angle (0 or ± 90^0). When the data is downloaded using Aimil Software, the angle of impact is also downloaded, allowing the user the option of deleting out of range measurement. This key features allows the user to audit the quality of data collection and ensured that the quality of the report is not effected by erroneous data collection.

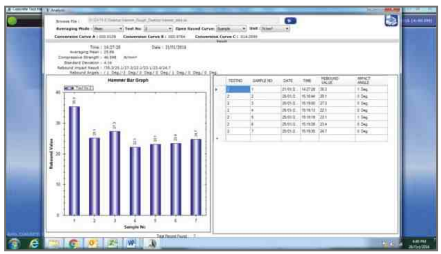
Hammers are available in two measuring range

1) • Measuring Range : 10 to 70 N/mm^2 • Impact energy : 2.207Nm.
2) • Measuring Range : 5 to 120 N/mm^2 • Impact energy : 2.207Nm.



Salient Features :

- Light and easy to use.
- High resolution and accuracy.
- Measurement and indication of the exact instrument tilt angle by triaxial inclinometer.
- Saves, displays and downloads data to PC via USB port.
- Automatic conversion of rebound values to equivalent compressive strengths in MPa, N/mm2, kg/cm2.
- Facility to generate customized curves between rebound value and compressive strength.
- Facility to generate test reports on the basis of selectable custom curves between rebound value and compressive strength.
- Storage of up to 400 measuring series of up to 10 measurements.
- Automatic elimination of erroneously high and erroneously low rebound values in a single measurement series.



Technical Data :

Display	: LCD Display (16x2)
Communication Protocol	: USB data transfer.
Software	: Aimil concrete test hammer software.
Battery Type	: Li-ion rechargeable cell 4.2V, 2200mAh.
Operating temperature	: 0 °C to 60 °C.

Ordering Information :	
AIM 388-DG	Digital Concrete Test Hammer measuring range 10 to 70 N/mm^2 with NCCBM certificate
AIM 388-DG-AN	Digital cum Analogue Concrete Test Hammer measuring range 10 to 70 N/mm^2 with NCCBM certificate
AIM-388-DG-1	Digital Concrete Test Hammer, measuring range 5 to 120 N/mm^2
AIM-388-DG-AN-1	Digital Cum Analog Concrete Test Hammer, measuring range 5 to 120 N/mm^2

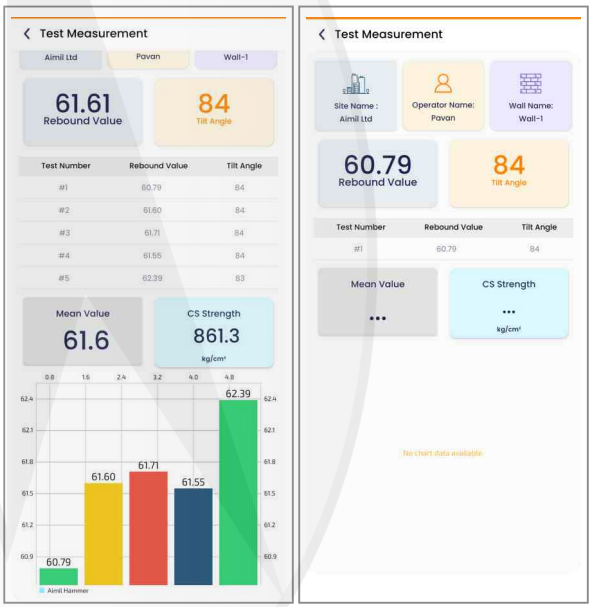
Digital Concrete Test Hammer, Android Based

AIM 388-DG-2, AIM 388-DG-AN-2, AIM-388-DG-3 & AIM-388-DG-AN-3

The Aimil Digital Rebound Hammer integrated with a mobile application, this digital hammer offers advanced features to streamline your workflow.

Features

- Mobile Integration: The hammer seamlessly connects to a mobile application via Bluetooth, allowing for real-time data transfer.
- Instant Reporting: Annotate measurements and generate comprehensive reports directly from your mobile device.
- Easy Sharing: Share generated reports instantly, enhancing collaboration and efficiency.
- User-Friendly Interface: The mobile app is designed for intuitive use, making it easy to navigate and utilize the hammer's features.
- Efficiency: Reduce the time spent on data recording and report generation.
- Accuracy: Ensure precise measurements with digital integration.
- Convenience: Easily access and share reports from your mobile device, anywhere and anytime.
- Connectivity: Enjoy the flexibility of wireless operation with Bluetooth connectivity.



Ordering Information :	
AIM 388-DG-2	Digital Concrete Test Hammer, Android based, measuring range 10 to 70 N/mm^2 with NCCBM certificate
AIM 388-DG-AN-2	Digital cum Analogue Concrete Test Hammer, Android based, measuring range 10 to 70 N/mm^2 with NCCBM certificate
AIM-388-DG-3	Digital Concrete Test Hammer, Android based, measuring range 5 to 120 N/mm^2
AIM-388-DG-AN-3	Digital Cum Analog Concrete Test Hammer, Android based, measuring range 5 to 120 N/mm^2

Hydraulic Jacks

AIM 465, AIM 466, AIM 467, AIM 468, AIM 469, AIM 470 & AIM 471

Hydraulic Jacks have multipurpose utility, i.e. application of loads while engaged in field investigation, determination of load carrying capacity of piles in the field, tensioning of wires in pre-stressed structures, loading of members of any structure for deformation characteristics etc. The jacks are supplied complete with manually operated pumping units fitted with bourdon tube type load gauge and high pressure flexible hose pipe.

All the jacks have a piston travel of 50 mm and jacks upto 1000 kN capacity are provided with retraction springs. These are available in the different ranges.

Note: Piston Travel upto 150mm can be provided on request

AIM 468

Aimil Range of Hydraulic Jacks (Analogue)

Capacity (kN)	Model No.	Specs of Load Gauge		General Specs	
		Range (kN)	L.C. (kN)	Piston Dia. (mm)	Piston Stroke (mm)
50	AIM 465	50	0.2	53.0	50
100	AIM 466	100	0.5	78.7	50
250	AIM 467	250	1	78.7	50
500	AIM 468	500	2	111.2	50
1000	AIM 469	1000	5	157.0	50
2000	AIM 470	2000	10	222.2	50
3000	AIM 471	3000	10	272.2	50

Ordering Information :

AIM 465	Hydraulic Jack 50kN capacity with gauge & hand pump with hose pipe 1 meter
AIM 466	Hydraulic Jack 100kN capacity with gauge & hand pump with hose pipe 1 meter
AIM 467	Hydraulic Jack 250kN capacity with gauge & hand pump with hose pipe 1 meter
AIM 468	Hydraulic Jack 500kN capacity with gauge & hand pump with hose pipe 1 meter
AIM 469	Hydraulic Jack 1000kN capacity with gauge & hand pump with hose pipe 1 meter
AIM 470	Hydraulic Jack 2000kN capacity with gauge & hand pump with hose pipe 1 meter
AIM 471	Hydraulic Jack 3000kN capacity with gauge & hand pump with hose pipe 1 meter
Optional Accessories :	
AIM 47501	High pressure flexible hose pipe 1 meter
AIM 47502	High pressure flexible hose pipe 2 meter
AIM 47503	High pressure flexible hose pipe 5 meter
AIM 475	Hydraulic Hand Pump without load gauge

Natural Frequency Tester

AIM 389

The Natural Frequency Tester is used to identify the active frequencies of any structure. This equipment is particularly useful for structural testing of bridges and other structures in earthquake affected regions. Using this equipment, a building's or structure's design can be simulated depending on the natural frequencies found at the design stage, in cases where the natural frequencies coincide with potential seismic frequencies.

This equipment allows all multiple frequencies to be used to excite a model structure and facilities the online measurement and storage of all results of the impact of the structure under such dynamic seismic like loading.

The equipment consists of a Dynamic Signal Source, Power Amplifier, Exciter & Sensors along with a Data Acquisition System.

The Dynamic Signal Source can generate variable frequencies with variable amplitudes. The selection of different signal types such as square, sinusoidal, triangular and random, etc. is also possible.

The Power Amplifier provides sufficient energy to drive the exciter which will feed the required energy to the structure through a plunger and impact sensor.

The Dynamic Data Acquisition System has a resolution of 16 bits with a very high sampling rate to sense the required parameters such as impact force and accelerometers to sense the effect of impact on the structure.

Technical Specification :

Various Type of Inputs Signal: Sine, Triangular, Square & Random

Frequency Range: 0.01Hz to 200Hz Variable Amplitude

The equipment consist of the following replaceable parts :

AIM 38901	Dynamic Signal Source
AIM 38902	Power Amplifier
AIM 38903	Dynamic Data Acquisition System
AIM 38904	Exciter
AIM 38905	Accelerometer (0-100Hz, ±5g)
AIM 38906	Cable Set a) Accelerometer cable b) Power cable for signal generator c) Power case for amplifier d) Exciter cable

Ordering Information :

AIM 389	Natural Frequency Tester for testing frequency of structures.