Since 1984 Azmoon Saz Mabna has been a leader in providing high quality construction laboratory equipment and supplies in IRAN and Middle East.

An experience of more than three decades has provided us with a vast knowledge and technical know-hows of this industry. From the very beginning, Azmoon Saz Mabna has focused on quality and cost control. Our products are manufactured according to the international and local standards like: ASTM, BS, DIN, and Iran National Standard ISIRI in construction materials. We have employed best technicians and engineers from the industry to manufacture our equipment.

Azmoon Saz Mabna designs special testing systems and devices to be used in quality control and R&D activities alongside its mass production line. We have own in house R&D department, which further modifies and develop new methods to make our equipment smarter and better. Beside this we have team of well qualified & experienced technicians on our production line to ensure prompt and effective services for our respective customers for installation, training & demonstration of equipment. Also all Azmoon Saz Mabna products are tested to guarantee quality, reliability and performance, backed by the international standards and warranties.

Today Azmoon's factories with a surfaces over than 4000m² with 80 experienced staff provides the needs of construction companies that carry out worldwide projects, private laboratories, universities and state institutions such as mineral research and exploration, road and highways, environment and city planning or hydraulics, irrigation and hydrology departments, etc.

The success of Azmoon Saz Mabna can be attributed to the company philosophy of providing quality use and refurbished laboratory equipment for a fair price, as well as, value – added service and support.

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Conferences

4th Congress of Concrete Day - University of Shahid Beheshti

National Concrete Competitions – Islamic Azad University of Zanjan

National Concrete Competitions of ICI

40th Iraq fair

Iranian Geotechnical Society Congress

1st Conference of NDT Tests Application

National Concrete Competitions - Concrete Research and Education Center

1st National Conferences of Concrete

Exhibitions

Iranian Geotechnical Society Exhibition

Arab Lab Exhibition 2015

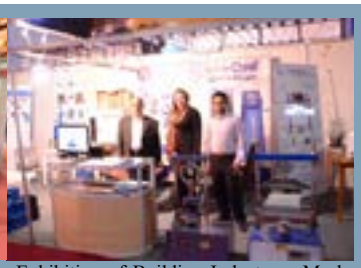
Iranian Concrete Institution

Iranian Concrete Institution

International Exhibition of Building Industry – Iran

Side Exhibition of National Concrete day

International Exhibition of Building Industry – Arbil, Iraq

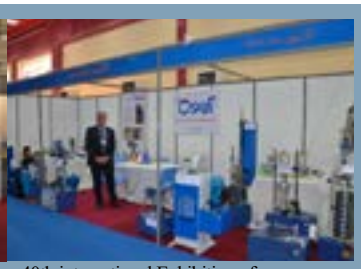


Exhibition of Building Industry – Mashhad

4th International Exhibition of Cement, Concrete, manufacturing technology and related machineries.

3rd Iran Lab Exhibition

2nd Iran Lab Exhibition



40th international Exhibition of Trade – Baghdad, Iraq

Azmoon Sanj Daghigh Calibration Laboratory was founded in 2011 based on 30 years of experience of Azmoon Saz Mabna company that consists of specialist engineers in manufacture, setup and installation and calibration fields in material testing equipment. The laboratory certified from institute of standard and industrial research of Iran (ISIRI) and standard and industrial research of Tehran and ISO/IEC 17025 certification for calibration of Mass, Force – Impact, Pressure, Dimension, Volume, Temperature and Humidity.

From the beginning of foundation, one of the main goals of Azmoon Sanj Daghigh is to improve tests results accuracies of our customer's laboratories and factories. Our specialist and experienced engineers and technicians in calibration fields are ready to corporate and serve services on companies who need calibration services.

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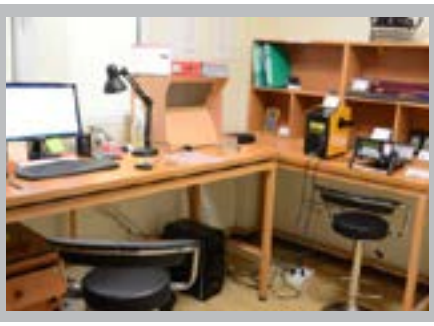
Force Laboratory

Pressure Laboratory

Temprature & Humidity Laboratory

Mass, Dimension & Volume Laboratory



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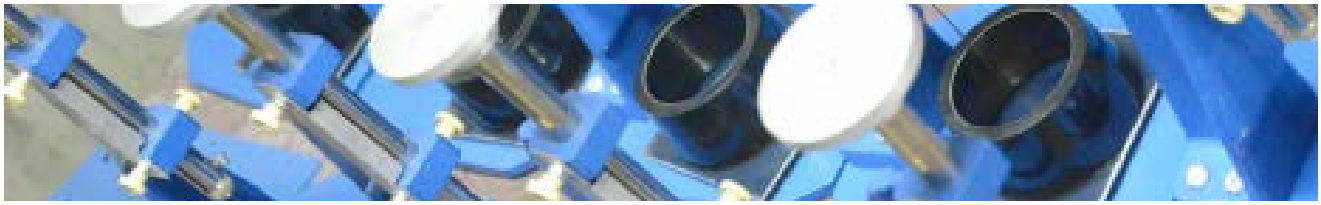

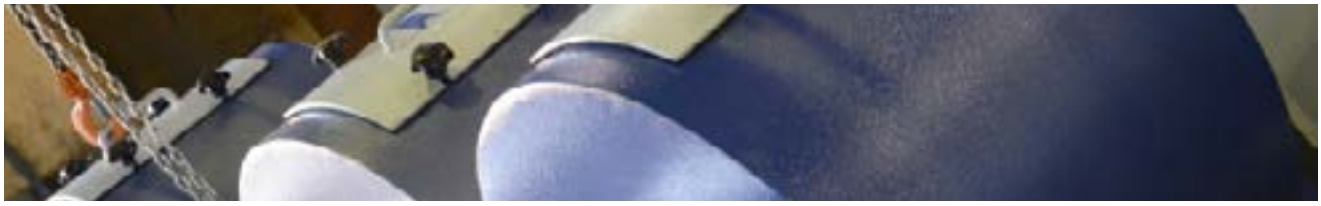

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Aggregate

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Laboratory Ovens

EN 1097-6
ASTM C127, F1360, C136, D558, D698, D1557, D1559
ISIRI 8475

AG 102

Manufacturing laboratory ovens is made for aggregate, concert, and soil tests and also used for drying and estimating the amount of moisture in materials.
The ovens are available in various capacities, 55, 100 and 200 liters. The ovens which are showed in pictures below include, Digital Thermostat, Timer, Thermometer and also include PID system to increase calibration precision.
Outside and main body is made of stainless plate with oily Electrostatic colored cover. The inside content includes Anodized heat-resistant trays made of Aluminum.
All types of ovens have exhaust and exit hatch to lead out gas, steam that helps drying process to be done faster. This hatch must to be open while testing process.

Indicator Resolution: IC

AG 101

Model	AG 101	AG 102	AG 104
Description	Laboratory Oven	Laboratory Oven	Laboratory Oven
Internal Dim.LxWxH	450x310x370mm	480x400x530mm	590x480x770mm
External Dim.LxWxH	720x450x510mm	610x550x830mm	750x520x1060mm
Capacity	55lit	100lit	200lit
Fan	No	Yes	Yes
Power Supply	800W, 220V, 50Hz,1ph	1600W, 220V, 50Hz,1ph	2000W, 220V, 50Hz,1ph
Temperature Range	50-250°C	50-250°C	50-250°C
Shelves	2	3	3
Weight(Approx.)	24kg	47kg	70kg

Aggregate

Electric Furnace

Electric furnaces are designed for laboratory and industrial applications. It is used for engineering tests of soils and aggregates, cement testing, ashing organic and inorganic samples, gravimetric analysis, ignition tests, etc. By installing powerful heat-producing heater on machine, you can reach to up to 1100 centigrade which melts some materials and it is helpful to get Ash from materials that you want.

AG 111

Model	AG 110	AG 111
Description	Electrical Furnace	Electrical Furnace
External Dim.LxWxH	550x500x350mm	550x500x350mm
Internal Dim.LxWxH	150x250x200mm	170x240x145mm
Capacity	7.5lit	5lit
Power Supply	4000W, 220V, 50Hz,1ph	4000W, 220V, 50Hz,1ph
Temperature Range	25-1100°C	25-1100°C
Weight(Approx.)	37kg	35kg

AG 121

AG 122

Hot Plate

ISIRI 4232

These equipment used for various kinds of purposes like drying materials or rising up temperature.

Model	AG 121	AG 122
Description	Electrical Hot Plate	Stirring Hot Plate
Top Plate	Round Dia. 190mm	Round Dia. 155mm
Power Supply	1500W, 220V, 50Hz,1ph	1500W, 220V, 50Hz,1ph
Dim.LxWxH	250x250x60mm	250x250x60mm
Weight(Approx.)	1.9kg	2.5kg

Desiccator

ISIRI 16567

Desiccator is a tool which works by using vacuum pump and creating vacuum content, it fills pore and void in samples and saturates laboratory samples like brick and asphalt.

AG 136

Model	AG 136
Description	Desiccator with Vacuum 240mm,With Suction valve

Riffle Boxes- Sample Splitters

ASTM C702
BS 812-1
EN 932-1
ISIRI 7146

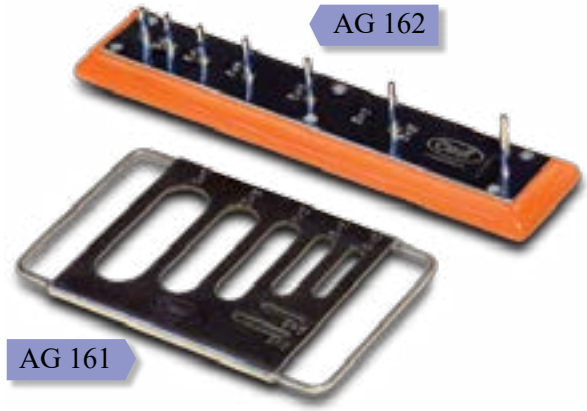
The set of splitters with collecting baskets are presented for like aggregates, gravels etc. Basic materials division in 4 main groups, therefore materials get divided by splitters at first, then sieves divided them into the finer classifications. Appropriate splitters for grading gravel are available in 1” or 2” sizes, and appropriate splitters for grading sand are available in 3/8” or 1/2”.

Model	AG 151	AG 152	AG 153	AG 154
Description	Sample Splitter	Sample Splitter	Sample Splitter	Sample Splitter
Chute Width	2in	1in	1/2in	3/8in
Opening Dim.	530x330mm	225x320mm	190x225mm	180x175mm
Chute No.	10	12	16	16

Flakiness and Elongation Gauge

BS 812-105
EN 933-3

Thickness Gauge is used to determine if the aggregate particles are to be considered as flaky, i.e. their thickness is less than 0.6 of their nominal size.
Also Elongation giage used to measure the elongation index of aggregate for classification.



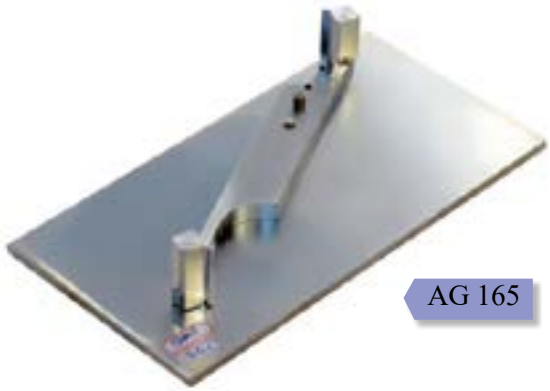
Model	AG 161	AG 162
Description	Flakiness Gauge	Elongation Gauge
Material	Stainless Steel	Nickel Plated Steel + Wooden Base
Weight(Approx.)	330g	850g

Aggregate

Proportional Caliper Device

ASTM D4791
ISIRI 11269
EN 933-4, 933-5, 933-7

Use to determine the percentage of flat particles, elongated particles, or both flat & elongated particles in coarse aggregates. Ratio desired is obtained by selecting one of four adjustable positions: 2 = l:2; 3 = 1:3; 4 = 1:4; or 5 = 1:5.



AG 165

Model	AG 165
Description	Proportional Caliper Device
Material	Galvanized Steel
Dim.LxWxH	200x400x75mm
Weight(Approx.)	7.5kg

Los Angeles Abrasion Machine

ASTM C131, C535
EN 1097-2
ISIRI 448, 8447

The Los Angeles Abrasion Machine is used for determination of the aggregates resistance to fragmentation, abrasion in crushed rock, slag, crushed and uncrushed gravel. Electrical control box, fitted with digital preset counter, function remote control with an accuracy of ±1 rpm, 12 pcs of steel balls with a total weight of 5000±25 g. The body structure has been designed for maximum noise reducing devices during the test.

AG 170

Model	AG 170
Description	Los Angeles Abrasion Machine
Power Supply	1.1kW, 220V, 50Hz,1ph
Drum Stroke	30-33rpm
Dim.LxWxH	980x740x1080mm
Weight(Approx.)	335kg

Los Angeles Noise Reduction Cabinet

The cabinet is lined internally with soundproofing material to reduce sound level conforming to CE directives. The cabinet must be ordered seperately with the Los Angeles machine if required. The cabinets made of 1.5mm thickness steel plates.

AG 171

Model	AG 171
Description	Los Angeles Noise Reduction Cabinet
Dim.LxWxH	1180×900×1050mm
Weight(Approx.)	120kg

Los Angeles Abrasive Charges

AG 172

Model	AG 172
Description	Los Angeles Abrasive Charges
QTY.	12

Micro Deval Apparatus

ASTM D6928
EN 1097-1
AASHTO TP58
ISIRI 14874-1

The popular Micro Deval test measures abrasion resistance and durability of mineral aggregates. The device has three stainless steel jar with 10mm thickness, also it contains 10 mm stainless steel balls and base on customer request the stainless steel ball could replace by alloy steel balls.

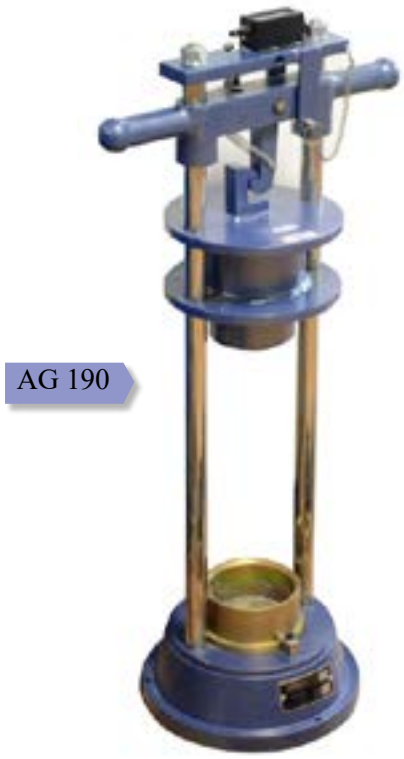
Model	AG 180	AG 180-1	AG 180-2
Description	Micro-Deval Apparatus	Micro-Deval Apparatus	Micro-Deval Apparatus
Standard	ASTM D6928	EN 1097-1	AASHTO TP58
Power Supply	1.1kW, 220V, 50Hz,1ph	1.1kW, 220V, 50Hz,1ph	1.1kW, 220V, 50Hz,1ph
Dim.LxWxH	500x1100x1100mm	500x1100x1100mm	500x1100x1100mm
Weight(Approx.)	95kg	95kg	95kg

Aggregate

Aggregate Impact Value Apparatus

BS 812-112
ISIRI 669

The Aggregate Impact Value Testing Apparatus is robustly designed to determine the Aggregate Impact Value (AIV) of aggregates which provides a relative measure of the resistance of an aggregate to sudden shock or impact. All parts that are in contact with materials are made of 60HRC hardened steel. Also aggregate impact value device has a counter to count number of impacts.



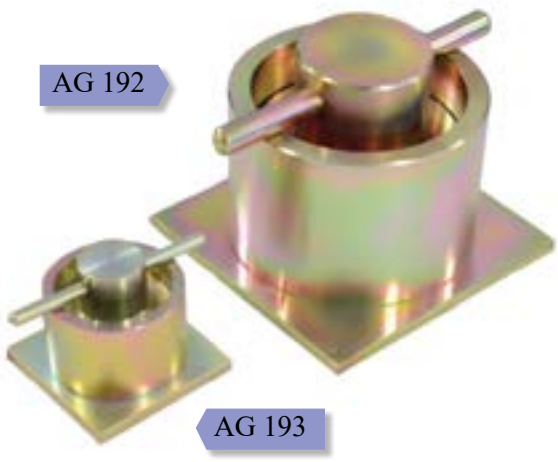
Model	AG 190
Description	Aggregate Impact Value Apparatus
Dim.LxWxH	400x270x860mm
Weight(Approx.)	52kg

Aggregate Crushing Value Apparatus

BS 812-110
ISIRI 663

The Aggregate Crushing Value (ACV) test set provides a relative measure of the resistance of an aggregate to crushing under a gradually applied compressive load. The 3 in size used for materials with lower than 9.52 mm aggregates and 6 in ACV used for materials with lower than 12.7 mm aggregates. The Aggregate Crushing Value (ACV) set is supplied complete with;

- Cylinder
- Base Plate
- Plunger
- Cylindrical Measure
- Tamping Rod



Model	AG 193	AG 192
Description	Aggregate Crushing Value Apparatus 3in	Aggregate Crushing Value Apparatus 6in
Weight(Approx.)	3.5kg	23.3kg

Aggregate Soundness Test Bath

ASTM C88
EN 1367- 2
ISIRI 449

This laver bath is designed to determine the quality and resistant of aggregate against Sodium Sulfate solution.

Device's tank is made of PVC and includes opening gate, digital thermometer, thermostat and circular pump which is made of stainless steel.

- Digital thermometer and thermostat are for temperature regulation.
- Heater element with 1000 W power.

AG 197

Model	AG 197
Description	Aggregate Soundness Test Bath
Circulation Pump Power Supply	370W, 220V, 50Hz,1ph
Heatting Power Supply	1000W, 220V, 50Hz,1ph
Internal Dim.LxWxH	720x530x500mm
External Dim.LxWxH	1150x680x1080mm
Weight(Approx.)	80kg

Soundness Conical and Cubic Basket

ASTM C88
EN 1367-2

Cubic basket is manufactured to saturate coarse aggregate samples into the solution, conical basket is manufactured to saturate fine aggregate samples into the solution. They are made of steel and designed to make the solution to be touch with aggregates directly and also designed for easy evacuating of solution, without any waste of sample's amount.

AG 196

AG 195

Model	AG 195	AG 196
Description	Soundness Conical Basket	Soundness Cubic Basket
Dim.LxWxH	Opening Dia. 100xH200mm	Internal 150x150x150mm
Weight(Approx.)	120g	1080g

Aggregate

Bulk Density Measures

ASTM C29, C138
BS 812-109
EN 1097-3
ISIRI 3203-2

The Bulk Density Measures used for determination of bulk and apparent specific gravity and absorption of coarse aggregate. These bulk density measure are manufactured from heavy duty steel complying with the related standard.

Model	AG 201	AG 202	AG 203	AG 204
Description	Bulk Density Measure	Bulk Density Measure	Bulk Density Measure	Bulk Density Measure
Nominal Capacity	3lit	8lit	15lit	30lit
Material	Steel	Steel	Steel	Steel
Weight(Approx.)	2.5kg	3kg	5kg	8kg

Sand Tube Sampler

ISIRI 11267

Sand Tube Sampler probes are robust and ease of use. They allow you to provide a quick sand profile or description. The material of the tube is stainless steel and the length of sampling part is 2m also the inner diameter of sampling part is 50 mm.

Model	AG 206
Description	Sand Tube Sampler 2000mm
Dim.DxL	50x2000mm
Material	Stainless Steel

Sand Absorption Cone and Tamper

ASTM C128
BS 812-109
ISIRI 4980

The Sand Absorption Cone and Tamper set is used in determining the specific gravity and water absorption of fine aggregates.
The cone dimensions are: upper diameter of 40 mm, lower diameter of 90 mm and 75 mm height and 80 gr weight. The tamping rod has a 25 mm base diameter.

The abrasion loss rate of aggregates is calculated after the specified number of revolutions stated in the relevant standard.

Model	AG 221	AG 222
Description	Sand Absorption Cone	Sand Absorption Tamper
Material	Brass	Nickel Plated Steel
Weight(Approx.)	80g	340g

Pycnometer 1000ml

ASTM D854-2
EN 1097-7
ISIRI 4980
Vacuum Pycnometer is used to determine the maximum specific gravity of various mixtures with maximum aggregate size up to 19.1mm (3/4in.) The capacity of this Pycnometer is 1000 ml.

Model	AG 230
Description	Pycnometer 1000ml
Weight(Approx.)	600g

Uncompacted Void Content of Fine Aggregate

ASTM C1252-06
This device use to determine the loose, uncompacted void content of fine or coarse aggregate samples. This method indicates the angularity and sphericity of fine aggregate and its workability in a mixture. Each sample is mixed with a spatula until it is homogeneous.

Model	AG 232
Description	Uncompacted Void Content of Fine Aggregate
Weight(Approx.)	2.5kg

Aggregate

Jaw Crusher

This type of crusher includes anti-erosion jaws which are made of steel and chrome with 50 HRC stiffness. It is able to replace by suitable tracks, output aggregate›s size is between 0.5-10 mm and apparatus capacity is 350 K/h. Maximum input sample size is between 100-140 mm.

Model	AG 250
Description	Jaw Crusher
Opening Dim.	100x140mm
Output Size	0.5-10mm
Power Supply	3kW,220V, 50Hz,1ph
Dim. LxWxH	750x350x600mm

AG 250

Ball Mill

This mill is used for grinding stiffed materials and has an anti-erosion steel case with special abrasive charges. The mill includes various rotational system for reaching to the critical rotate, maximum size of input aggregate is 10 mm and minimum size of output materials is 50µ.

Model	AG 270
Description	Ball Mill
Capacity	1000-700g
Power Supply	370W,220V, 50Hz,1ph
Dim. LxWxH	300x350x700mm
Weight(Approx.)	45kg

AG 270

Fine Mill

This device is used for wearing materials with size of 35µ. Maximum size of input material is 2.5 and minimum size of output material is 10µ. The pounder is made of chrome and steel with 63 HRC stiffness.

Model	AG 290
Description	Fine Mill
Input Size	2.5mm
Output Size	10µm
Capacity	150-250-500cc
Power Supply	3kW,220V, 50Hz,1ph
Dim.LxWxH	100x70x60cm
Weight(Approx.)	280kg

AG 290

Electronical Balances / Bascules

Due to the increasing of importance of balancing and laboratories measurements, Azmoon Saz Mabna acquire exclusive representative of JADEVER of Taiwan in IRAN.
Durable and high accuracy of JADEVER balances make this brand as one of the leader of the market. All models of JADEVER balances could use in Archimedes test.

Model	WE 022	WE 024	WE 084	WE 086	WE 130	WE 131	WE 133	WE 230
Description	SKY 600	SKY 3000	NWTH 10	NWTH 20	JWE 3	JWE 6	JWE 30	JWI 3000
Pan	146x125mm	146x125mm	210x190mm	210x190mm	330x250mm	330x250mm	330x250mm	500x400mm
Ability to add Hook	No	No	No	No	Yes	Yes	Yes	No
Capacity	600g	3000g	10kg	20kg	3000g	6000g	30kg	150kg
Div.	0.01g	0.1g	0.5g	1g	0.1g	0.2g	1g	10g

Stainless Steel Calibration Weight Sets

These sets of weights are used as reference standard weights for mass calibration. Azmoon Sanj Daghigh, could provide calibration certificate for these weight sets based on customers require.

AG 317

Model	AG 316	AG 317	AG 318	AG 319	AG 320	AG 321-1
Weight Range(Approx.)	1-100g	1-500g	200g	1000g	2000g	20kg
Material	Steel - Chorme plated	Steel - Chorme plated	Steel - Chorme plated	Cast Iron	Cast Iron	Cast Iron

Aggregate

Specific Gravity Frame

EN 12390-7
BS 812-2, 1881-14
ISIRI 4982

The Specific Gravity Frame is used in conjunction with a suitable electronic balance for specific gravity determination of fresh and hardened concrete and aggregates.

The lower part of the frame incorporates a moving platform, which carries the water tank allowing the test specimens to be weighed in both air and water.

AG 333

Model	AG 333
Description	Specific Gravity Frame
Dim.LxWxH	680x410x950mm
Weight(approx.)	25kg

Density Basket & Concrete Sample Holder

ASTM C127
AASHTO T85
ISIRI 4982

Density baskets used for specific gravity tests. These baskets made of steel. Concrte sample holder is used for 100x100 mm & 150x150 mm cubic and 6x12 in & 4x8 in cylindrical samples.

AG 336

AG 337

Model	AG 336	AG 337	AG 338
Dim. DxH	200x200mm	100x120mm	160x160mm
Material	Galvanized Steel	Galvanized Steel	Galvanized Steel
Weight(approx.)	1000g	300g	500g

Trays

Azmoon has Different sizes of high quality made trays of stainless steel. These trays are in two different categories: 1- Rectangular Trays 2- Circular Trays.

Rectangular Trays

Model	AG 417	AG 418	AG 419	AG 420
Dim.LxWxH	310x245x55mm	360x280x60mm	415x315x65mm	600x400x70mm
Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Weight(approx.)	450g	600g	800g	1000g

Circular Trays

Model	AG 421	AG 422	AG 423
Dim.DxH	250x50mm	330x60mm	410x60mm
Material	Stainless Steel	Stainless Steel	Stainless Steel
Weight(approx.)	330g	570g	850g

Concrete

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Digital Compression Machine

ASTM C39
BS 1610
ISIRI 1608-3

Digital Compression Machine used to determine the compressive strength of concrete. Azmoon's Compression Machines designed to perform reliable compression tests on concrete specimens especially suitable for on-site applications.

The Azmoon's Digital Compression Machines combines precision and simplicity with the unique design and ease of use manual.

The machines design and made base on ASTM C39 standard. The jaws made of 60HRC hardened steel and the stroke vertical limit is 40 mm.

Technical specifications:

- Capacity range: 1200 kN – 4000 kN
- Uniform adjustable loading rate (kg/sec)
- 2x16 in LCD backlight indicator
- 600 bar. Pressure transmitter
- Ability to save dimension of sample and calculate the compression strength
- Automatic overload detection
- Power Supply: 1hp, 1 phase
- Limit switch (40 mm stroke vertical limit)
- RS232 serial port to communicate with computer
- Software calibration ability

Model	CO 100	CO 111	CO 160	CO 121	CO 133
Description	Digital Indicator Compression Machine	Digital Indicator Compression Machine	Digital Indicator Compression Machine	Digital Indicator Compression Machine	Digital Indicator Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Capacity	1200kN	1500kN	2000kN	3000kN	4000kN
Resolution	1kN	1kN	1kN	1kN	1kN
Distance Between Plates	320mm	320mm	320mm	320mm	320mm
Stroke Vertical Limit	40mm	40mm	40mm	40mm	40mm
Selectable Measuring Force	kgf	kgf	kgf	kgf	kgf
Oil Tank Capacity	8litre	8litre	8litre	8litre	8litre
Platen Dia.	225mm	225mm	225mm	225mm	225mm
Indicator	Digital LCD 2x16in backlight - Manufactured by Azmoon	Digital LCD 2x16in backlight - Manufactured by Azmoon	Digital LCD 2x16in backlight - Manufactured by Azmoon	Digital LCD 2x16in backlight - Manufactured by Azmoon	Digital LCD 2x16in backlight - Manufactured by Azmoon
Communication Port	Serial Communication Port- RS232	Serial Communication Port- RS232	Serial Communication Port- RS232	Serial Communication Port- RS232	Serial Communication Port- RS232
Calibration Method	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software
Possibility to use with Length Transducer	-	-	-	-	-
Reporting Software	-	-	-	-	-
Dim.LxWxH	600x360x1060mm	680x430x1060mm	700x430x1100mm	800x560x1450mm	800x580x1550mm
Weight (Approx.)	380kg	420kg	450kg	900kg	1050kg

Concrete

Semi-Automatic Compression Machine

ASTM C39
BS 1610
ISIRI 1608-3

Semi-Automatic Compression Machine used to determine the compressive strength of concrete. Azmoon's Semi-Automatic Compression Machines designed to perform reliable compression tests on concrete specimens especially suitable for on-site applications.

Controlling the real pace rate will affect the compressive strength. In this type of compression machine deviation of pace rate form the preset rate will be indicating and could be corrected manually by user. Semi-Automatic Compression Machines combines precision and simplicity with the unique design and ease of use manual.

The machines design and made base on ASTM C39 standard.

Technical Specifications:

- Capacity range: 1200 kN – 4000 kN
- Uniform adjustable loading rate (kg/sec)
- 2x16 in LCD backlight indicator
- 600 bar. Pressure transmitter
- Oil level indicator.
- Ability to save dimension of sample and calculate the compression strength
- Automatic overload detection
- Power Supply: 750 W, 220V, 1hp, 1 phase
- Limit switch (40 mm stroke vertical limit)
- RS232 serial port to communicate with computer
- Ability to choose units: N, lbf, kgf
- 60 HRC hardened plates.
- Software calibration ability
- Ability to connect LVDT sensor to determination of strain and plot stress-strain graph
- Ability to Save data in excel format (.xls)

Model	CO 103	CO 113	CO 161	CO 124	CO 136
Description	Semi Automatic Compression Machine	Semi Automatic Compression Machine	Semi Automatic Compression Machine	Semi Automatic Compression Machine	Semi Automatic Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	1kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Capacity	1200kN	1500kN	2000kN	3000kN	4000kN
Resolution	1kN	1kN	1kN	1kN	1kN
Distance Between Plates	320mm	320mm	320mm	320mm	320mm
Stroke limit	40mm	40mm	40mm	40mm	40mm
Selectable Measuring Force	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf
Oil Tank Capacity	8litre	8litre	8litre	8litre	8litre
Platen Dim. (mm)	225mm	225mm	225mm	225mm	225mm
Indicator	Digital LCD 4x16in backlight - made in Taiwan	Digital LCD 4x16in backlight - made in Taiwan	Digital LCD 4x16in backlight - made in Taiwan	Digital LCD 4x16in backlight - made in Taiwan	Digital LCD 4x16in backlight - made in Taiwan
Communication Port	Serial Communication Port- RS232	Serial Communication Port- RS232	Serial Communication Port- RS232	Serial Communication Port- RS232	Serial Communication Port- RS232
Calibration Method	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software
Possibility to use with Length Transducer	-	-	-	-	-
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	600x360x1060mm	680x430x1060mm	700x430x1100mm	800x560x1450mm	850x580x1550mm
Weight (Approx.)	380kg	420kg	500kg	900kg	1050kg

Fully Automatic-Servotronic Compression Machine

ASTM C39
BS 1610
ISIRI 1608-3

Fully Automatic Compression Machines designed to determine strength compression of cubic and cylindrical concrete samples. Operator could enter the rate of load per second (kgf/s) manually. The loading rate has been controlled by Step motor and PLC.

At the end of the test, device turn off automatically and the result of the test appears on indicators.

Fully-Automatic Compression Machines combines precision and simplicity with the unique design and ease of use manual. The machines design and made base on ASTM C39 standard.

Technical Specifications:

- Capacity range: 1200 kN – 4000 kN
- Uniform adjustable loading rate (kg/s)
- 2x16 in LCD backlight indicator
- 600 bar. Pressure transmitter
- Oil level indicator.
- Ability to save dimension of sample and calculate the compression strength
- Automatic overload detection
- Power Supply: 750 W, 220V, 1hp, 1 phase
- Limit switch (40 mm stroke vertical limit)
- RS232 serial port to communicate with computer
- Ability to choose units: N, lbf, kgf
- 60 HRC hardened plates.
- Software calibration ability
- Ability to Save up to 200 tests data to internal memory

Below feather could add to Fully Automatic-Servotronic Compression Machines based on customer request

- Ability to use of LVDT sensor to determination of strain and plot stress-strain graph in PC.

Concrete

Model	CO 106	CO 116	CO 162	CO 127	CO 139
Description	Automatic Compres-sion Machine	Automatic Compres-sion Machine	Automatic Compres-sion Machine	Automatic Compres-sion Machine	Automatic Compres-sion Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Capacity	1200kN	1500kN	2000kN	3000kN	4000kN
Resolution	1kN	1kN	1kN	1kN	1kN
Distance Between Plates	320mm	320mm	320mm	320mm	320mm
Stroke limit	40mm	40mm	40mm	40mm	40mm
Selectable Measuring Force	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf
Oil Tank Capacity	8litre	8litre	8litre	8litre	8litre
Platen Dim. (mm)	225mm	225mm	225mm	225mm	225mm
Indicator	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT
Communication Port	Serial Comunication Port- RS232	Serial Comunication Port- RS232	Serial Comunication Port- RS232	Serial Comunication Port- RS232	Serial Comunication Port- RS232
Calibration Method	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software
Possibility to use with Length Transducer	✓	✓	✓	✓	✓
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	900x560x1250mm	920x560x1250mm	950x560x1250mm	1100x560x1250mm	1200x580x1280mm
Weight (Approx.)	420kg	450kg	500kg	950kg	1100kg

Fully Automatic-Servotronic Compression Machine with LVDT

ASTM C39
BS 1610
ISIRI 1608-3

The technical specification of this device is same as Fully Automatic-Servotronic Compression Machine. The only difference is this device has LVDT sensor to calculate of deformation rate of under load sample.

Technical Specifications:

- Capacity range: 1200 kN – 4000 kN
- Uniform adjustable loading rate (kg/s)
- 2x16 in LCD backlight indicator
- 600 bar. Pressure transmitter
- Oil level indicator.
- Ability to save dimension of sample and calculate the compression strength
- Automatic overload detection
- Power Supply: 750 W, 220V, 1hp, 1 phase
- Limit switch (40 mm stroke vertical limit)
- RS232 serial port to communicate with computer

- Ability to choose units: N, lbf, kgf
- 60 HRC hardened plates.
- Software calibration ability
- Ability to Save up to 200 tests data to internal memory
- LVDT sensor to determination of strain and plot stress-strain graph in PC.
- Instant concrete elasticity module determination

Model	CO 109	CO 119	CO 166	CO 130	CO 142
Description	Automatic Compression Machine	Automatic Compression Machine	Automatic Compression Machine	Automatic Compression Machine	Automatic Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Capacity	1200kN	1500kN	2000kN	3000kN	4000kN
Resolution	1kN	1kN	1kN	1kN	1kN
Distance Between Plates	320mm	320mm	320mm	320mm	320mm
Stroke limit	40mm	40mm	40mm	40mm	40mm
Selectable Measuring Force	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf	kgf, N, lbf
Oil Tank Capacity	8litre	8litre	8litre	8litre	8litre
Platen Dim. (mm)	225mm	225mm	225mm	225mm	225mm
Indicator	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT	7in Touchscreen Digital LCD - TFT
Communication Port	Serial Communication Port RS232	Serial Communication Port RS232	Serial Communication Port RS232	Serial Communication Port RS232	Serial Communication PortRS232
Calibration Method	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software	Possible with Internal Software
Possibility to use with Length Transducer	✓	✓	✓	✓	✓
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	900x560x1250mm	920x560x1250mm	950x560x1250mm	1100x560x1250mm	1200x580x1280mm
Weight (Approx.)	420kg	450kg	500kg	950kg	1100kg

Concrete

Digital Concrete Flexural Machine

ASTM C293
EN 12390-5
ISIRI 490, 17731

Azmoon's Digital Concrete Flexural 320 kN Machines are designed to perform reliable flexure tests on standard concrete beams, concrete or natural stone, concrete paving flags, natural stone slabs and tensile splitting test of concrete paving blocks.

Technical Specifications:

- 4x16 in LCD backlight indicator
- 250 Bar. Pressure transmitter
- Oil level indicator
- Uniform adjustable loading rate (kg/s)
- Automatic overload detection
- Ability to save dimension of sample and calculate bending strength
- Ability to choose units: N, lbf, kgf
- Limit switch (40 mm stroke vertical limit)
- Save data in Excel format (.xls)
- Software calibration

Below feather could add to Digital Concrete Flexural Machines based on customer request:

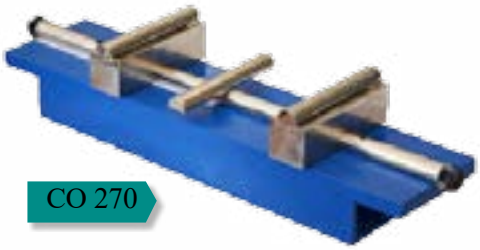
- Ability to use of LVDT sensor to determination of strain and plot stress-strain graph in PC.

Model	CO 259	CO 260	CO 261
Description	Digital Indicator Concrete Flexural Machine	Semi Automatic Concrete Flexural Machine	Full Automatic Concrete Flexural Machine
Capacity	320kN	320kN	320kN
Resolution	200N	200N	200N
Stroke limit	40mm	40mm	40mm
Selectable Measuring Force	kgf	kgf, N, lbf	kgf, N, lbf
Oil Tank Capacity	8L	8L	8L
Indicator	Digital LCD 2x16in backlight - Manufactured by Azmoon	Digital LCD 4x16in backlight - made in Taiwan	7in Touchscreen Digital LCD - TFT
Power Supply	220V, 50Hz,1ph	220V, 50Hz,1ph	220V, 50Hz,1ph
Dim. of Body LxWxH	980x850x1450mm	980x850x1450mm	980x850x1450mm
Dim. of Hydraulic System LxWxH	400x400x1000mm	400x400x1000mm	400x400x1000mm
Weight of Body (Approx.)	250kg	250kg	250kg
Weight of Hydraulic System (Approx.)	50kg	50kg	50kg

Flexural Device for Concrete Beam

ASTM C78, C293
EN 12390-5
ISIRI 490, 17731

Flexural device is used for two and center point tests on 100x100x-400/500mm and 150x150x600/750mm concrete beams. Equipped with two lower rollers, one of them articulated, and two upper rollers for third point tests. It is possible to place in the center only one upper roller for center point tests. To perform the flexural test, this device has to be used with a concrete compression machine.


CO 270

Model	CO 270
Description	Flexural Device for Concrete Beam
Dim.LxWxH	550x220x140mm
Weight (Approx.)	22kg

Plastic Concrete Compression Test Apparatus

Plastic Concrete Compression Test Apparatus

This device used for determine compression strength and deformation of plastic concrete samples.

Technical Specification:

- Capacity range: 30kN – 100kN
- 7 in HMI indicator.
- Ability to install LVDT sensor to measure sample deformation
- Plot Stress-Strain and Force-Displacement graph
- Digital adjustable loading rate (0.01-5mm/min)
- Limit switch
- Force resolution: 0.1% FSS
- Length resolution: 0.3% of sample length
- Diameter of upper and lower jaws is 165 mm.
- Ability to save and print all data like diameter, force, displacement, stress, strain and elasticity module

Below feather could add to Plastic Concrete Compression Test Apparatus based on customer request:

- Replace usual LVDT by a 0.001mm LVDT

Model	CO 272	CO 275	CO 276
Description	Plastic Concrete Compression Test	Plastic Concrete Compression Test	Plastic Concrete Compression Test
Capacity	30kN	50kN	100kN
Resolution	10N	20N	50N
Platen Dim. (mm)	165mm	165mm	165mm
Indicator	LCD 4x16 backlight made in Taiwan	LCD 4x16 backlight made in Taiwan	LCD 4x16 backlight made in Taiwan
Flowmeter	Digital Displacement Transducer 50mm, Div. 0.01mm	Digital Displacement Transducer 50mm, Div. 0.01mm	Digital Displacement Transducer 50mm, Div. 0.01mm
Power Supply	66kg-cm (stepper motor), 220V, 50Hz,1ph	88kg-cm (stepper motor), 220V, 50Hz,1ph	1.1kW(servomotor), 220V, 50Hz,1ph
Stroke Limit Switch	50mm	50mm	50mm

Concrete

Compressometer Static Modulus of Elasticity

ASTM C469
UNI 6556
Concrete Compressometers are used to determine the deformation (both axial and diametrical) of concrete cylinder specimens during the compression test. Dial indicator resolution is 0.002 mm.
The device presented in two models: 100x200 mm specimen dimension and 150x300mm specimen dimension.

Model	CO 279	CO 280
Description	Compressometer Static Modulus of Elasticity	Compressometer Static Modulus of Elasticity
Specimen Dimension DxH	100x200mm	150x300mm
Indicator	Dial Indicator 12.7mm, 0.002mm	Dial Indicator 12.7mm, 0.002mm
Weight (Approx.)	1.1kg	2.5kg

Apparatus Compacting Factor

BS 1881: 103
The compacting factor is the ratio between the weight of the partially compacted concrete and the weight of the fully compacted concrete.
Compacting Factor Apparatus is used to determine the compacting factor of concrete with low, medium and high workability.
This device designed to undertake a more precise and sensitive test procedure than the simple slump test. The apparatus consists of two conical hoppers mounted on a cylinder. Each hopper has a hinged flange with quick release mechanism and everything is mounted on a rigid steel stand.

Model	CO 207
Description	Compacting Factor Apparatus
Dim.LxWxH	600x240x1300mm
Weight (Approx.)	39kg

Time of Setting of Concrete Mixtures by Penetration Resistance

ASTM C403
ISIRI 6046

This device is used to determine time of the mortar fraction in concrete mixes with slump greater than zero, by testing mortar sieved from mix. The apparatus consists of a spring penetrometer (capacity 100 Kgf, precision 1 Kgf) and six interchangeable stainless steel needle pointers of 16-32-65-160-325-650 mm2 area. A sliding ring indicates the reached load on the handle of the penetrometer.

CO 200

Model	CO 200	CO 201
Description	Time of Setting of Concrete Mixtures by Penetration Resistance	Time of Setting of Concrete Mixtures by Penetration Resistance
Indicator	Proving Ring Dial Indicator	Proving Ring Digital Indicator
Capacity	1kN	1kN
Resolution	10N	10N
Length	50cm	50cm
Weight (Approx.)	3kg	3kg

Specimen Cutting Machine

This machine used to cut concrete, block, cement and etc. specimen.

Technical Specification:

- Equipped with European blade
- A sturdy saw table with anti-slip support
- Equipped with blade guard
- Equipped with blade cooler
- Adjustable blade height

CO 240

Model	CO 240
Description	Specimen Cutting Machine
Abration Blade size	Dia 450mm
Power Supply	2.2kW, 3000rpm, 220V, 50Hz,1ph
Maximum depth cut	152mm

Concrete

Drum Type Mixer

EN 12390 – 2

Drum type mixer is used for mixing of concrete, plaster and mosaic. The capacity of the mixer is 140 liters and the rotating speed is 30 rpm. Also it is possible to run the drum manually.

CO 302

Model	CO 302
Description	Tilting Drum Concrete Mixer
Capacity	140lit.
Speed	35rpm
Power Supply	550W, 220V, 50Hz,1ph
Dim.LxWxH	1200x700x1400mm
Weight (Approx.)	80kg

Pan Type Mixer

EN 12390 – 2

Pan Type Concrete Mixer is suitable for mixing concrete in the laboratory. The efficient mixing of concrete is necessary if quality specimens are to be manufactured. The Pan Type Concrete Mixers is designed to give efficient mixing of both dry and wet materials.

The mixer blades made of abrasion replaceable steel and hardened against wear. Pan type concrete mixer manufactured in three different size: 60, 100, 200 liters.

Model	CO 299	CO 300	CO 301
Description	Pan Type Concrete Mixer	Pan Type Concrete Mixer	Pan Type Concrete Mixer
Nominal Capacity	60lit.	100lit.	200lit.
Power Supply	1.1kW, 220V, 50Hz,1ph & 3ph	3kW, 220V, 50Hz,1ph & 3ph	4kW, 220V, 50Hz,1ph & 3ph
RPM	35	35	35

based on BS EN 12350-4 international standard, there are 4 methods to determine workability of fresh concrete that categorized in 5 level as below table:

Raw	Test Method	Workability Level
1	Vebe	Very Low
2	Vebe, Compacting Factor	Low
3	Compacting factor, Slump test	Medium
4	Compacting factor, Slump test, Flow	High
5	Flow	Very High

Concrete

Slump Cone Test

ASTM C31, C143, C90
BS 1881-125
EN 12350-2
ISIRI 3203-2
Slump Cone test is used for determination of the consistency and workability of fresh concrete.

Model	CO 311	CO 312	CO 313
Description	Slump Cone Test With Steel Cone	Slump Cone Test With Plastic Cone	Slump Cone Test With Stainless Steel Cone
Weight (Approx.)	10kg	8kg	10kg

Accessories

Model	CO 311-1	CO 312-1	CO 313-1	CO 311-2	CO 312-2	CO 311-3	CO 311-4	CO 311-5
Description	Steel Cone	Plastic Cone	Stainless-Steel Cone	Metal Pan Suitable for Steel and Stainless-steel Cone	Metal Pan Suitable for Plastic Cone	Tamping Rod	Aluminum Cone Funnel	Slump Measuring Scale
Dim.	dia. 100mm Dia. 200mm H:300mm	dia. 100mm Dia. 200mm H:300mm	dia. 100mm Dia. 200mm H:300mm	Dia.460 mm W:460mm	Dia.460 mm W:460mm	Dia. 16mm H:600mm	dia. 95mm Dia. 190mm H:100mm	450x350mm
Weight (Approx.)	1.2kg	1.1kg	1.9kg	5.5kg	5.5kg	0.9kg	170g	1.2kg

K-Slump Tester

ASTM C1362

K-Slump used to determine the degree of flow ability or consistency of fresh concrete. This tester used for in-situ measurements or inside test molds. Test results can be correlated against the slump values.

This method used for concrete specimen with aggregate lower than 37.5mm.

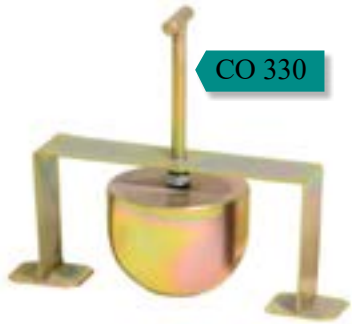
CO 320

Model	CO 320
Description	K-Slump
Dim.LxWxH	50x50x400mm
Weight (Approx.)	500g

Kelly Ball Apparatus

ASTM C360

Kelly Ball Apparatus used to determine the workability of fresh concrete. Kelly Ball Consist of a hemispherical ended cylinder with guiding frame and a handle graduated in inch. This tester used for in-situ or laboratories measurements.



CO 330

Model	CO 330
Description	Kelly Ball Apparatus
Dim.LxWxH	420x150x300mm
Weight (Approx.)	14kg

Vebé Consistometer Apparatus

ASTM C1170, 1176

EN 12350-3

ISIRI 12598

This device used for determination of the workability of rolling compacting concrete and estimation of stability time. Vebe Consistometer method is based on the same principle of the slump cone test method. This device contains below accessories:

- vibrating table
- transparent disc
- cylindrical bucket
- complete with filling funnel
- slump cone
- tamping rod.

CO 335

Model	CO 335
Description	Vebé Consistometer
Power Supply	250W, 3000rpm 220V, 50Hz,1ph
Dim.LxWxH	400×400×900mm
Weight (Approx.)	110kg

RCC Vibratory Hammer

ASTM C1435

This apparatus used for compacting and building compressive & bending concrete samples in laboratories or in-situ.

Model	CO 337
Description	RCC Vibratory Hammer
Power Supply	180W, 3000rpm 220V, 50Hz,1ph
Weight (Approx.)	110kg

V-Funnel

EN 12350-9
ISIRI 3203-9
This apparatus used to evaluate flow time of a specified volume of SCC concrete. The test is not appropriate for concrete that the maximum size of the aggregate exceeds 22.4 mm.
The test set consist of a V shape electrastatic painted steel funnel placed vertically on a supporting stand with 10 lit capacity.

CO 340

Model	CO 340
Description	SCC V-Funnel
Dim.	250×750x940mm
Weight (Approx.)	12kg

L-Box

EN 12350-9
ISIRI 3203-10
L shape box used to determine flow ability and passing ability rate of SCC concrete. The box made of electrastatic painted steel plates and the diameter of the bars is 12 mm and the distance between the bars is 38 mm.

CO 342

Model	CO 342
Description	SCC L-Box
Dim.	700×200×600mm
Weight (Approx.)	8kg

CO 344

U-Box

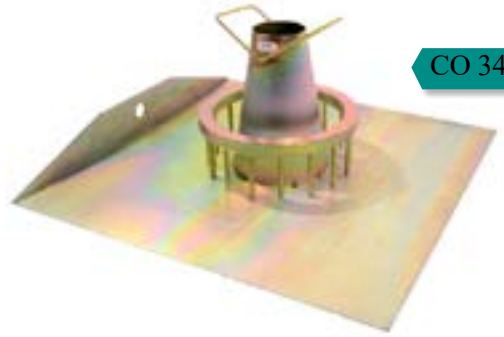
U Shape Box device is used to determine the filling and passing ability of SCC concrete. This apparatus made based on ASTM C1262 standard.

Model	CO 344
Description	SCC U-Box
Dim.	740×500×300mm
Weight (Approx.)	13kg

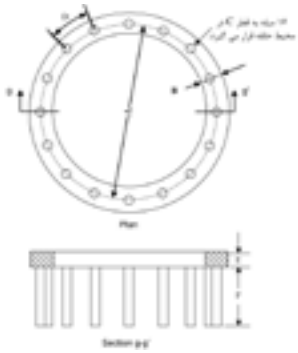
J-Ring

ASTM C1621
EN 12350-12
ISIRI 11271

This apparatus simulates the condition of standard density of reinforcement bars and used for determining the passing ability, the flow spread and flow time of SCC concrete as the concrete flows through the J-Ring Apparatus. The Ring consists of 16 bars with 16 mm diameter and the dimension of the square plate is 900x900mm.



CO 346



Diameter	mm
A	300 ± 3.3
B	38 ±1.5
C	16 ±3.3
D	58.9 ±1.5
E	25 ±1.5
F	100 ± 1.5

Model	CO 346
Description	SCC J-Ring
Weight (Approx.)	36kg

Air Entrainment Meter

ASTM C231-Type A
ASTM C173
EN 12350-7
ISIRI 3520

This device used for determining the percentage of air enclosed in freshly mixed concrete by operating according to the air pressure principle. Air Entrainment Meter Device Made from cast aluminum alloy. The installed manometer shows percentage of air mixed in fresh concrete in range of 0-10% directly. This instrument consists of pressure gauge tamping rod and hand pump.

CO 380

Model	CO 380
Description	Air Entrainment Meter
Test Method	Type A
Gauge	2.5bar
Volume	6lit
Dim.LxWxH	350x350x670mm
Weight (Approx.)	16kg

Concrete

ASTM C192, C31
EN 12390-1, 12390-2

Cast Iron Mold

The proposed models range from the cast iron version conforming to EN and ASTM standards, ideal for laboratory use, with steady and smooth to have more reliable test results. Azmoon's cast iron molds present in different sizes.

Model	CO 466	CO 468	CO 470	CO 474
Specimen Size	100x100x100mm	100x100x100mm	150x150x150mm	200x200x200mm
Material	Cast Iron	Cast Iron	Cast Iron	Cast Iron
No. of the Parts	3	3	3	4
No. of the Gangs	1	3	1	1
Weight (Approx.)	6.5kg	12.5kg	9kg	14kg

Composite Concrete Cube Mold

ISIRI 1608-1

These high quality plastic concrete cube molds manufacture in two types: monolithic and splitted models.

- Resistance against corrosion and decay
- Thanks to brilliant design easy use in all steps of sampling
- Self-colored molds
- Increase the strength of the molds by adding an aluminum layer to the upper lips

Model	CO 506	CO 508
Specimen Size	150x150x150mm	150x150x150mm
Material	Fiberglass Composite	Fiberglass Composite
No. of the Parts	1	2
No. of the Gangs	1	1
Weight (Approx.)	0.9kg	0.7kg

ABS Concrete Cube Mold

ABS Concrete Cube molds manufacture of high quality material and present in a variety of size. In compare of iron cast molds these molds have below feathers:

- Standard dimensions
- Light weight
- Easy to clean
- Smooth inner side
- Long life time
- Ability to use in high temperature

Model	CO 504	CO 505
Specimen Size	100x100x100mm	150x150x150mm
Material	ABS	ABS
No. of the Parts	1	1
No. of the Gangs	1	1
Weight (Approx.)	0.5kg	0.9kg

Airbrush for an Airpump or Aircompressor

Airbrush used for extrude concrete samples from molds.

CO 509

Compacting Bar

EN 12390-1, 12390-2
ISIRI 1608-2
Base on BS standard compacting bar used for compact concrete and its weight is 1810 g.

CO 476

Model	CO 476
Description	Compacting Bar
Material	Powder painted Steel
Square Face Sizes	1x1in
Weight (Approx.)	1810g

Concrete

Cylindrical Molds

ASTM C192, C31, C39, C490, C496
EN 12390-1, 12390-2
ISIRI 1608-1
Cylindrical steel molds manufacture of high quality material with below feathers.

Model	CO 600	CO 606
Specimen Size	Dia. 6in H 12in	Dia. 4in H 8in
Material	Steel	Steel
Weight (Approx.)	8.2kg	4.5kg

Beam Molds

ASTM C192, C31
EN 12390-1, 12390-2
Steel beam molds are manufactured in accordance with dimensions and tolerances stated in the related standards. Two part and clamp attached base plate, the steel molds are designed to be durable, corrosion resistant and easy to clean.
The variety models listed in below table.

Model	CO 700	CO 702	CO 704	CO 706
Specimen Size	100x100x500mm	150x150x650mm	200x200x750mm	100x100x400mm
Material	Steel	Steel	Steel	Plastic ABS
Weight (Approx.)	25kg	34kg	48kg	1kg

Freezing and Thawing Mold

ASTM C666
EN 196, 1367-1
These molds use to prepare sample for freezing and thawing test.

Model	CO 725-1
Description	Freeze and Thaw Mold
Material	Cast Iron
Dim. LxWxH	3x4x16in
Weight (Approx.)	11.3kg

Freezing and Thawing Apparatus

ASTM C666
ISIRI 12728a, 20185

Freezing and Thawing Apparatus used for evaluating the persistence of concrete samples against freezing and thawing cycles in a specified procedure. The concrete specimens size is 3x4x16 in and the box of the apparatus has the capacity for 13 pieces of samples.

Technical Specification

- Completely automatic testing
- Temperature range: -18 ºC / +40 ºC
- Ability to define upper temperature limit in hardware
- Inside cabinet circulation fan
- 7 inches' large touch screen indicator
- PLC controlling system
- Testing box made of stainless steel
- Testing box capacity: 13 pieces
- Ability to communicate to PC and save data in Excel format (.xls)
- Ability to save data on USB memory card
- Temperature resolution: 1 ºC
- Save data on USB-memory
- 6 kW UPS as power supply back up (should order separately)

Model	CO 725
Description	Freeze and Thaw Testing Aparatus
Indicator	7in Touchscreen Digital LCD - TFT
No of Specimens	13 pcs
Heater Power Supply	1kW,220V, 1ph 1kW, 380V, 3ph
Refrigaraotr Power Supply	380V, 1.5hp, 3ph or 220V, 1.5hp, 1ph
Fan Power Supply	370W,220V, 50Hz,1ph
Temprature Range	-18+40˚C
Internal Dim. LxWxH	2000x570x250mm
External Dim. LxWxH	2550x780x1200mm
Weight (Approx.)	120kg

CO 725

Concrete

Linear Shrinkage Determination Apparatus

ASTM C426
ISIRI 8592
Linear Shrinkage Determination Apparatus are used for determination of the effect of aggregates on the drying, shrinkage and length change of hardened cement paste, concrete and mortar. Dimension of the mold is 100x100x500 mm and apparatus equipped to a 0.002 resolution displacement gauge.

CO 722

CO 724

Model	CO 724
Description	Length Comparator with Dial Indicator
indicator	10mm - 0.01mm
Material	Galvanized Steel
Dim. LxWxH	200x200x520mm
Weight (Approx.)	16.8kg

Model	722 CO
Specimen Size	100x100x500mm
Material	Steel

Splitting Tensile Test Device

ASTM C496
EN 12390-6
ISIRI 6047
Splitting Tensile Test Devices are accessories for compression machines for measuring the splitting tensile strengths of 6x12 in and 4x8 in cylindrical specimens.

Model	CO 755	CO 756
Specimen Size	6x12in	4x8in
Material	Galvanized Steel	Galvanized Steel

Concrete Vibrating Table

ASTM C31, C192
EN 12340-2, 12350-4
BS 1881-108
Concrete vibrating table with a rigid body used for vibrating test beam mold concrete specimen in laboratories.
Azmoon's concrete vibrating table presented in two different size.

Model	CO 870	CO 872
Description	Concrete Vibrating Table	Concrete Vibrating Table
Motor Speed	3000rpm	3000rpm
Power Supply	250W, 220V, 50Hz, 1ph	250W, 220V, 50Hz, 1ph
Table Dim.	700x700mm	1000x1000mm
Dim. LxWxH	700x700x420mm	1000x1000x520mm
Weight (Approx.)	90kg	110kg

Accelerated Concrete Curing Tank

ASTM C684
BS EN 12390-2
Accelerated Concrete Curing Tank is designed for curing concrete and cement specimens according to ASTM C684 standard. The bath is equipped with digital thermometer, thermostat and timer.

CO 730

Model	CO 730
Description	Accelerated Concrete Curing Tank
Power Supply	1000W,220V, 50Hz,1ph
Internal Dim.	580x400x290mm
External Dim.	855x500x500mm
Material	Stainless Steel
Volume	67lit
Weight (Approx.)	37kg

Concrete Curing Water Bath

This Concrete Curing Water Bath made of PVC material and used for maintain of concrete specimen in water. The bath has inlet and outlet vent and it is possible to add heating element to it.
Below feathers could add to the device based on customer request:

- Italian heater element and thermostat
- Increasing bath capacity

- CO 990: Heating element 2000 W

CO 754

Model	CO 753	CO 754
Description	Concrete Curing Water Bath	Concrete Curing Water Bath
Matrial	Galvanized Steel	Plastic (PVC)
Volume (Approx.)	1000lit	1000lit
Dim. LxWxH	2000x700x700mm	1850x600x850mm

CO 990

Concrete

Cylindrical Capping Equipment

ASTM C617
ASTM C192
EN 12390-2

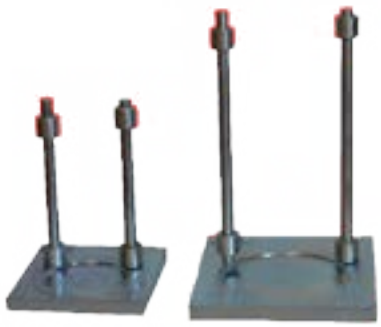
Capping Melting Pot

Capping Melting Pot is used for melting the capping compound. The device contains a 1000 W heater plus a steel container for mixing capping material.

Model	CO 910
Description	Capping Melting Pot
Power Supply	1000W, 220V, 50Hz,1ph
Weight (Approx.)	2.6kg

Cylindrical Capping Mold

Used to assure plane end surfaces perpendicular to the axis of the cylinder during the capping.



Model	CO 897	CO 898	CO 899
Specimen dia.	3in - 76mm	4in- 100mm	6in - 150mm
Material	Steel Body with Galvanized Steel Plate	Steel Body with Galvanized Steel Plate	Steel Body with Galvanized Steel Plate
Weight (Approx.)	2.8kg	3.5kg	12.1kg

Steel Steiner & Capping Rubber

ASTM C1231

Based on ASTM C1231 standard, Steel Steiner and Capping Rubber used for compression tests on concrete cylinder specimens, as an alternative method to the Sulphur capping and grinding machine. The Rubbers made of Neoprene.

Steel Steiner applied on two flat side of cylindrical specimen. Capping rubbers used between Steel Steiner and specimen to reach a uniform load distribution on flat sides of cylindrical specimen.

Model	CO 886	CO 888	CO 887	CO 889
Description	Steel Steiner & Capping Rubber - 4in	Steel Steiner & Capping Rubber - 6in	Capping Rubber 4in	Capping Rubber 6in
Qty per pkg	2	2	2	2
Dim. DxH	145x25mm	205x25mm	100x12mm	150x12mm
Weight (Approx.)	3.5kg	8.8kg	0.3kg	0.6kg

Water Impermeability Tester

EN 12390-8

Water Impermeability Tester Apparatus used for the determination of the depth of penetration of water to hardened concrete specimens under pressure. The system can test 200x200x120 mm cube specimen and the maximum pressure is 10 bar based on EN 12390-8 standard.

Also based on customer requests it is possible to replace usual compressor with 50 liters' compressor.

CO 950

CO 952

Model	CO 950	CO 952
Specimen dia.	Water Impermeability Tester	Water Impermeability Tester
No. of Test Specimens	3	6
Volume of Water Feed	200cc	200cc
Water Pressure	10bar	10bar
Dim.LxWxH	640×1120×1980mm	640x1120x1980mm
Weight (Approx.)	90kg	130kg

Concrete Water Impermeability Sampling Mold

CO 953

Model	CO 953
Description	Concrete Water Impermeability Sampling Mold
Material	Galvanized Steel
Specimen Size.	200x200x120mm
No. of Gangs	1

Cement

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Grout Flow Cone Set

ASTM C939
ISIRI 17510
Grout Flow Cone apparatus used for evaluating flow time of grouts, mortars, muds and other fluid materials.
This apparatus set consists of a stainless steel cone, a stand and a 2000 cc plastic graduated cup.

CE 109

Model	CE 109
Description	Grout Flow Cone Set
Dim.LxWxH	200x300x600mm
Weight(Approx.)	4.5kg

Le Chatelier Flask

ASTM C188
AASHTO T133
EN 196-6
ISIRI 7148
Le Chatelier Flask used for measuring specific gravity (relative density) of cement, lime and filler aggregate, ground granulated blast-furnace slag and fly ash for concrete.
The neck of Le Chatelier Flask is graduated from 0 to 1 ml and from 18 to 24 ml with divisions of 0,1 ml and accuracy of 0.5 ml.

CE 110

Model	CE 110
Description	Le Chatelier Flask
Nominal Volume	250cc
Division	0.1cc
Weight	120g

Bulk and Packaged Cement Samplers

ASTM C183
AASHTO T127
EN 196-7
ISIRI 11267
Bulk and Packaged Cement Samplers used for collecting cement samples in bulk storages or shipment. The samplers made of brass or steel and consists of two concentric tubes with slots.

Model	CE 115	CE 116
Description	Packaged Cement Tube Sampler	Bulk Cement Sampler
Length	730mm	1700mm
Material	Brass	Brass
Weight(Approx.)	1.8kg	4.5kg

Cement

Automatic Blaine Air Permeability Apparatus

ASTM C204
EN 196-6
BS 4359:2
AASHTO T153
ISIRI 18807-6

CE 118

Automatic Blaine apparatus used to determine particle size of powder materials such as Portland cement and lime in terms of their specific surface according to the Blain technique.
Depending on cement density and porosity and its density, device calculated the mass that should test.
Technical Specification

- Automatically evaluating particle size of powder materials and air permeability
- Measuring test environment
- PLC control system
- Optic sensor to determine cement properties
- 4.3 in touch screen indicator
- Ability to import standard reference cement properties for device calibration and evaluate the results in software
- Ability to run multi test and averaging the results
- Ability to communicate with PC true serial communication RS-232 port
- Print the results

Model	CE 118
Description	Automatic Blaine Air Permeability Apparatus
Power Supply	220V, 50Hz,1ph
Material	Steel Body, Electrostatic painted
Indicator	4.3in Touchscreen LCD
Communication Port	Serial Communication Port- RS232
Dim.LxWxH	160x290x440mm
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel
Weight(Approx.)	7kg

Blaine Air Permeability Apparatus

ASTM C204
EN 196-6
BS 4359:2
AASHTO T153
ISIRI 18807-6

Blaine Air Permeability Apparatus used to determine the fineness of Portland cement in terms of the specific surface expressed as total surface area in square centimeters per gram of cement.

The device set consists of a glass U tube manometer with valve, brass=, test cell with disk and plunger all in stainless steel, 100 filter paper disks, monomeric liquid and thermometer.

CE 120

Model	CE 120	CE 121	CE 122	CE 123	CE 123-1	CE 123-2	CE 123-3	CE 124	GE 190
Description	Blaine Air Permeability Apparatus	Standard Filter paper 100 per pack	Manometric Liquid Red Colour	Rubber Aspirator for Suction Hand Pump	U-Tube Glass Manometric	Perforated Disk	Grease	Cell Body and Plunger	Mercury
Material	Steel Body, Electrostatic painted	Filter Paper	-	-	Pyrex	Brass	-	Stainless Steel	-
Dim.LxWxH	160x290x-440mm	Dia. 12.7mm	-	-	Meet to ASTM C 204	Dia. 12.6		Dia. 12.7	-
Weight (Approx.)	7kg	-	100cc	-	-	-	50g	-	100g

Standard Reference Cement

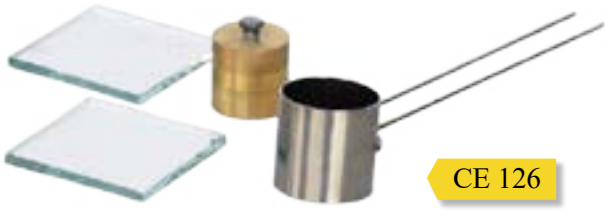
Model	CE 125
Description	Standard Reference Cement
Weight(Approx.)	14g

CE 125

Cement

Le Chatelier Mold

EN 196-3
BS 6463
ISIRI 18807-3
Le Chatelier Mold used for determining the expansion of cement. Le Chatelier Mold made from a brass spring tensioned split cylinder having internal dia. 30 by 30 mm high, with two pointers 150 mm long.



Model	CE 126
Description	Le Chatelier Mold
Material	Brass
Weight(Approx.)	150g

Le Chatelier Bath

EN 196-3
BS 6463
ISIRI 18807-3
This apparatus constructed of a stainless steel inside chamber, the device can hold up 12 Le Chatelier molds and has adjustable temperature control with digital indicator.

Model	CE 140
Description	Le Chatelier Bath
Power Supply	1000W, 220V, 50Hz,1ph
Resolution	1°C
Ext. Dim.LxWxH	630x300x215mm
Int. Dim.LxWxH	400x200x160mm
Weight(Approx.)	10kg

Fully Automatic Autoclave for Soundness Portland Cement

ASTM C151, C490
AASHTO T107
ISIRI 391

This high quality and durable apparatus has been design and made by Azmoon. High pressure boiler made from stainless steel with 154 mm internal diameter and 400 mm height. The holding rack has the capacity for 10 cement specimen. The device controls all steps of process base on ASTM C151. It is possible to see all steps of test in a 7in touch screen LCD. After doing all steps the device shut down automatically. For safety purpose Azmoon consider three safety steps: Safety valve, Pressure switch and Overloading detecting systems.

Model	CE 150
Description	Autoclave for Soundness Portland Cement
Internal Dim. DxH	154x400mm
Indicator	7in Touchscreen LCD - TFT
Power Supply	2.5kW, 220V, 50Hz,1ph
Dim.LxWxH	420x660x900mm
Specimen Rack	10 Samples
Weight(Approx.)	160kg

Cement

Drying Shrinkage Prism Molds & Hoppers

ASTM C151, C490
AASHTO T107
ISIRI 391

Model	CE 151	CE 152	CE 152-1	CE 153	CE 154	CE 155
Description	Mold	Mold	Mold	Hopper	Hopper	Insert
Dim.LxWxH	25x25x250mm	25x25x285mm	75x75x285mm	25x25x250mm	25x25x285mm	Dia. 5mm
Material	Stainless Steel	Stainless Steel	Stainless Steel	Aluminum	Aluminum	Steel
No. of Gangs	2	2	1	-	-	-
Weight(Approx.)	3kg	3.5kg	10kg	400g	500g	3.5g

Length Comparator

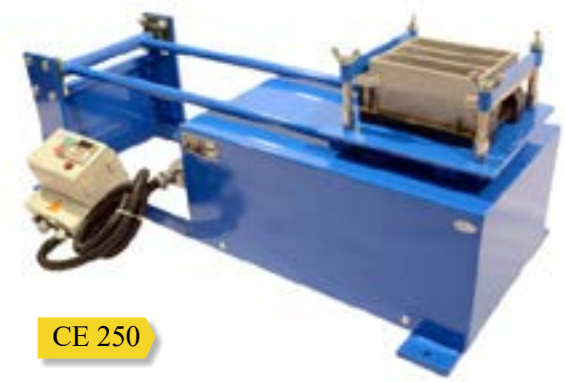
ASTM C151, C157, C490, C596
EN 1367-4, 12617-4
ISIRI 17725

This apparatus is used for a number of length measurements concerning mainly cement and mortar specimens with different lengths. The device has a 0.002 mm accuracy analogue gauge also if customers request it is possible to replace this gauge with a 0.001 mm digital one.

Model	CE 156	CE 158
Description	Length Comparator with Digital Indicator	Length Comparator with Analogueue Indicator
Gauge Div.	0.001mm	0.002mm
Material	Nickel Plated Steel	Nickel Plated Steel
Weight(Approx.)	6kg	6kg

Cement Jolting Apparatus

EN 196/1
EN ISO 679
ISIRI 393
Cement Jolting Apparatus used for compact the 40x40x160 cement prisms in the mold. The number of jolts per minute is 60.


CE 250

Model	CE 250
Description	Jolting Apparatus
No. of jolting per min	60
Power Supply	250W, 220V, 50Hz,1ph
Dim.LxWxH	450x1000x420mm
Weight(Approx.)	65kg

Cement Curing Cabinet

ASTM C511, C192
EN 196-1, 12390-2
EN ISO 679
ISIRI 393
For curing specimen of cement and concrete in commercial and labrarotires Cement Curing Cabinet used. Body of the cabinet made of hardened UPVC plastic profile that fitted by two-layer glass with appropriate insulation. Cement curing cabinet equipped by heating system, cooling system and humidifier system. Also its possible to adjust temperature and humidity by help of PLC.
Temperature range: from 10 ºC to 50 ºC
Humidity range: from 50% to 95%

CE 255

Model	CE 255
Description	Curing Cabinet
Temperature Range	10-50 °C
Humidity Range	50-95%
Int. Dim.LxWxH	900x590x1170mm
Ext. Dim.LxWxH	1000x700x140mm
Power Supply	1200W, 220V, 50Hz,1ph
Weight(Approx.)	200kg

Cement

Gillmore Needle Apparatus

ASTM C266
AASHTO T154
Gillmore Needle Apparatus Use to determine the setting time of cement. The apparatus consists of two horizontal arms which carry two weighted steel and precisely machined needles.
The initial needle diameter is 2.12 mm and 113.4 gr weight, and the final needle diameter is 1.06 mm and 453 gr weight. Also this apparatus set consists of two transparent square glass.

CE 110

Model	CE 168
Description	Gillmore Needle
Material	Aluminum and Stainless Steel
Weight(Approx.)	2kg

Cement Vicat Apparatus

ASTM C187, C191
AASHTO T129, T131
EN 196-3, 480-2
ISIRI 392
Cement Vicat Apparatus used for determine setting time and consistency of cement by Vicat method. The device made of Cast Aluminum.
The Cement Vicat Apparatus set consists of:

- An aluminum frame
- Graduated scale with index
- Sliding probe of 300 g
- Consistency plunger with 10 mm dia.
- Glass base plate
- Initial needles

also below parts could be ordered separately depending on requirement:

- Final needle
- Needle based BS standard

CE 170

CE 171

CE 173

CE 175

CE 172

Model	CE 170	CE 171	CE 172	CE 173	CE 174	CE 175	CE 176
Description	Vicat Apparatus	Conical Bakelite Mold	Initial set Needle	Plunger	Base Plate	Final set Needle	Standard Needle Meets EN 480-2
Dim.LxWxH	140x190x290mm	dia. 60 Dia.70 H40 mm	Dia. 1mm	Dia. 10mm	100x100mm	Dia. 1mm	Dia.1.13mm
Material	Cast Aluminum Body	Bakelite	Steel	Aluminium	Glass	Steel & Brass	Steel
Weight(Approx.)	2500g	100g	13g	13g	100g	14g	14g

Cement Vicat Apparatus 1000g

EN 480-2
ISIRI 8117-2
This Apparatus used for determination of setting time of mortars that contain chemical additives.
Total weight of needle p is 1000 gr. This apparatus made of Cast Aluminum.
also below parts could be ordered separately depending on requirement:

- Conical mold made of Teflon with upper 70 mm diameter and lower 80 mm diameter and 40 mm height
- 100x100 mm transparent glass
- Standard 1.13 mm needle

CE 177

Model	CE 177	CE 177-1	CE 176
Description	Vicat Apparatus	Conical Mold	Standard Needle Meet to EN
Dim.LxWxH	140x190x390mm	Dia. 80mm dia. 70 H 40mm	Dia. 1.13mm H 50mm
Material	Cast Aluminum Body	Teflon	Steel
Weight(Approx.)	3kg	70g	14g

Cement

Marsh Funnel Viscometer

ASTM D6910

Marsh Funnel Viscometer is used for the determination of flow time by the use of flow cups of fluid materials such as paint, varnish etc. Marsh Funnel Viscometer Supplied complete with 1000 cc capacity plastic measuring cup.

CE 200

Model	CE 200
Description	Marsh Funnel Viscometer with Measuring cup
Hole Dim.	47mm
Material	ABS Plastic
Weight(Approx.)	1kg

Sand Content Test Kit

ASTM D4381

ISIRI 7826

Sand Content Test kit is an accurate and ease of use apparatus and used for determining the sand content of drilling muds.

The kit consists of:

- A 200-mesh sieve 2,5” in diameter
- A 500ml wash bottle
- Carrying case
- 10ml glass measuring tube
- A collar upon which a small funnel is fitted on either end.

CE 201

Model	CE 201
Description	Sand Content Test Kit
Dim.LxWxH	260x180x100mm
Weight(Approx.)	346g

Mud Filter Press

This filter press is the most effective means for determining the filtration properties of drilling muds and cement slurries.

The apparatus contains

- Mud reservoir mounted in a frame
- Pressure source
- Filtering medium
- Graduated cylinder for receiving the measuring filtrate

CE 202

Model	CE 202
Description	Mud Filter Press API
Dim.LxWxH	200x140x490mm
Weight(Approx.)	5.5kg

Mud Balance

ASTM D4380

ISIRI 20190

The mud balance provides a simple method for the accurate determination of mud density. an ideal equipment for site applications.

The device consists of:

- Graduated arm with an integral spirit level
- counter weight
- cup, lid, rider and knife-edge

CE 203

Model	CE 203
Description	Mud Balance
Weight(Approx.)	1.8kg

Cement

Cement Flow Table

ASTM C230
EN 459-2
ISIRI 10445

Cement Flow Table used for determining the consistency of mortar, lime and cement specimens.

The apparatus consists of:

- Conical brass mold
- 7 inches' brass plate
- Tamper

Model	CE 210	CE 211	CE 211-1
Description	Flow Table - Complete Set	Flow Mold	Flow Table Tamper
Dim.LxWxH	380x250x350mm	Dia100x dia.70x h50mm	DxL: 35x155mm
Weight(Approx.)	12kg	0.7kg	263 g

Mortar Cement Mixer

ASTM C305
EN 196-1
ISIRI 393

Mortar Cement Mixer used for mix mortars and cement pastes primarily to the requirements of standards. Based on standard, mixing of cement should be done a specified speed range: 140-285 rpm.

The machine is supplied complete with stainless steel bowl and stainless steel beater. The space between blades and bowl is in range of 0.8 – 2.5 mm.

Automatic Mortar Cement Mixer

ASTM C305
EN 196-1
ISIRI 393

Automatic Mortar Cement Mixer is an automatic programmable mixer. The main parameter initialized in device program, but operator could change the parameter manually.

All steps of mixing like, timing, speeds, delays and also steps of add cement, water and etc. done automatically. All steps show on a 7 inches' touchscreen LCD.

The apparatus consists of:

- Cement container

CE 220

Model	CE 230	CE 220	CE 221	CE 222
Description	Mortar-Cement Mixer	Automatic Mortar-Cement Mixer	Stainless Steel Bowel	Stainless Steel Beater
Capacity	4.7lit	4.7lit	4.7lit	-
Power Supply	250W, 220V, 50Hz,1ph	250W, 220V, 50Hz,1ph	-	-
Dim.LxWxH	300x620x630mm	320x700x700mm	Internal Dia: 209	140x200mm
Weight(Approx.)	40kg	50kg	1.2kg	0.7kg

Y Type Mixer (Dry mixer)

This type of mixer used for mixing and homogenizing dry materials. Using a Y type mixer allows to reduce the time of mixing the product, and also to achieve high quality mixing The device has a one-hour timer and a steel container.

CE 235

Model	CE 235
Description	Y Type Mixer (Dry mixer)
Capacity	1kg
Power Supply	370W, 220V, 50Hz,1ph
Dim.LxWxH	380x250x350mm
Weight(Approx.)	35kg

Cement

Digital Cement Compression Machine

ASTM C109, C348, C349
EN 196-1
EN ISO 679
ISIRI 393, 8193

Digital Cement Compression Machines are designed to perform reliable strength and flexure tests on mortar specimens. Body of this machines made of high strength rigid steel. To determine compression strength of 50x50x50 mm, 40x40x40 mm and 70x70x70 mm cubic and 100 mm diameter in 180 mm height cylindrical mortar specimen, machines equipped to a hydraulics loading system. Also machine has the ability to use for flexure tests on a 40x40x160 mm cubic specimen.

Technical Specification

- 2x16 LCD with backlight indicator
- Preset adjustable uniform rate loading
- 600 bar pressure transmitter
- Oil level indicator
- 18-liter hydraulic oil tank
- Ability to save dimension and determine compression strength of specimen
- Overload control system
- Limited switch
- 60 HRC hardened steel plates
- Acquiring data continuously and saving data in Excel format. (.xls)
- RS232 serial port to communicate with PC
- Ability to calibration in software

CE 260

Semi-Automatic Cement Compression Machine

ASTM C109, C348, C349
EN 196-1
EN ISO 679
ISIRI 393, 8193

Semi-Automatic Cement Compression Machines are designed to perform reliable strength and flexure tests on mortar specimens. The machine has a pace toolbar that shows amount of deviation of loading rate from preset loading rate. This machine is ease of use and beginner operator could run it very easily.

Technical Specification

- 4x16 LCD with backlight indicator
- Preset adjustable uniform rate of loading (kg/sec)
- 600 bar pressure transmitter
- Oil level indicator
- 18-liter hydraulic oil tank
- Ability to save dimension and determine compression strength of specimen
- Overload control system
- Limited switch
- 60 HRC hardened steel plates
- Acquiring data continuously and saving data in Excel format. (.xls)
- RS-232 serial port
- Ability to choose units N, lbf, kgf
- Ability to calibration in software

Also based on customers request it's possible to add LVDT sensor to show deformation of cubic and cylindrical specimen.

CE 270

Cement

Automatic Cement Compression Machine

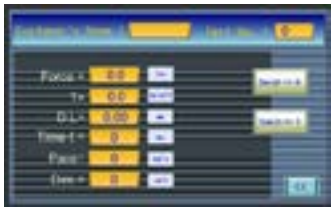
ASTM C109, C348, C349
EN 196-1
EN ISO 679
ISIRI 393, 8193

Automatic Cement Compression Machines are designed to perform reliable strength and flexure tests on mortar specimens. In this type of cement compression machines, it is possible to initialized loading rate (kg/sec). Loading rate controlled by using of step motors to reach an uniform to reach an uniform pacerate.

CE 280

Technical Specification

- 7 inches' LCD touch screen indicator
- Preset adjustable uniform rate of loading (kg/sec)
- 600 bar pressure transmitter
- Oil level indicator
- Ability to save dimension and determine compression strength of specimen
- Overload control system
- Limited switch
- 60 HRC hardened steel plates
- Acquiring data continuously and saving data in Excel format. (.xls)
- RS-232 serial port
- Ability to choose units N, lbf, kgf
- Ability to calibration in software
- Ability to add LVDT sensor to plot stress-strain graph (based on customer order)



Model	CE 260	CE 270	CE 280
Description	Digital Indicator Cement Compression Machine	Semi Automatic Cement Compression Machine	Automatic Cement Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Capacity	320kN	320kN	320kN
Resolution	500N	500N	500N
Distance Between Plates	250mm	250mm	250mm
Stroke Vertical Limit	40mm	40mm	40mm
Selectable Measuring force	kg.f	kg.f, N, lb.f	kg.f, N, lb.f
Oil Tank Capacity	18litre	18litre	18litre
Platen Dim.	225mm	225mm	225mm
Indicator	Digital LCD 2x16 backlight - made in Iran	Digital LCD 4x16 backlight - made in Taiwan	Digital LCD touchscreen 7 in - made in Taiwan
Communication Port	Serial Communication Port- RS232	Serial Communication Port RS232	Serial Communication Port- RS232
Calibration Method	Possible with internal Software	Possible with internal Software	Possible with internal Software
Possibility to use with Length Transducer	-	✓	✓
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	700x400x1450mm	700x400x1450mm	560x1050x1350mm
Weight(Approx.)	250kg	250kg	290kg

Cement Compression & Flexural Testing Frames

CE 300

CE 320

Model	CE 300	CE 320
Description	Compressive Frame	Flexural Frame
Specimens Dim.	50x50x50mm	40x40x160mm
Meet To Standard No.	ASTM C109	ASTM C348
Dim.LxWxH	125x100x230mm	125x100x270mm
Weight(Approx.)	5.2kg	5.6kg

Cement

Standard Reference Sand

EN 196-1
ISIRI 3040
Standard Reference Sand use to determine cement strength, the weight of standard reference sand is 1350±5g.

Model	CE 322
Description	Standard Reference Sand
Weight(Approx.)	1350±5g

CE 322

Cement Molds

ASTM C109, C141, C348
EN 12390-1, EN 196-1
ISO EN 679
ISIRI 393
These molds manufacture and machined by Azmoon from high quality material with high accuracy.

CE 330

CE 381

CE 382

Model	CE 330	CE 346	CE 360	CE 362	CE 370	CE 381	CE 382
Description	Cubic Mold	Cubic Mold	Flexural Mold	Hoper	Briquette Mold	Flexural Mold Rammer	Compression Mold Rammer
Material	Cast Iron	Cast Iron	Cast Iron	Aluminum	Bronze	Plastic	Plastic
Dim.LxWxH Of Specimen	50x50x50mm	70.7x70.7x70.7mm	40x40x160mm	40x40x160mm	12x3 in	20x80x200mm	15x25x170mm
No. of Gangs	3	3	3	3	3	-	-
Weight (Approx.)	3.5kg	6kg	6kg	1.5kg	4kg	200g	70g

Digital Flexural & Tension Cement-Mortar Machine

ASTM C348, C307
EN 196-1
ISO EN 679
ISIRI 393

This machine is used for the flexural strength determination of 40x40x160 mm cement specimens and tensile tests on cement briquettes. Preset initialized loading rate and 10 N load cell resolutions are the other feathers of machine.

Technical specification:

- Uniform outlet loading rate 0.5-5 mm/min
- 30 kN load cell (10 N resolution)
- 4x16 inches LCD indicator
- Ability to save test results and failure force
- Software calibration
- Automatic stop at failure point
- RS232 serial port to communicate with PC
- Equipped to limited switch

Model	CE 373
Description	Flexural &Tension Cement Mortar Machine
Capacity	30kN
Accuracy	10N
Selectable Measuring force	kg.f
Digital Indicator	Digital LCD 4x16 backlight
Communication Port	Serial Communication Port- RS232
Calibration	Possible with Internal Software
Dim.LxWxH	600x360x1100mm
Weight(Approx.)	100kg
Stroke Limit Switch	50mm

Soil

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Stainless Steel Sieves

ASTM E11
ISIRI 5002-1

Azmoon manufacture a wide range stainless steel high quality sieves which are used in all types of sieve testing applications, from sampling and classification of soils, aggregates and other powdered and granular materials. The sieve's of Azmoon manufacture of highest quality material to ensure consistent fit, accurate specifications and durable construction.

SO 100: Sieve series with 8 in frame 15pcs
SO 155: Sieve series with 12 in frame 15pcs

Aperture size(mm)	Mesh No.	Frame 8in 203mm	Frame 12in 305mm	Aperture size(mm)	Aperture (in)	Frame 8in 203mm	Frame 12in 305mm
0.038	400	SO 151	SO 253	6.3	1/4	SO 121	SO 223
0.045	325	SO 150	SO 252	8	5/16	SO 117	SO 221
0.053	270	SO 149	SO 250	9.5	3/8	SO 118	SO 220
0.063	230	SO 148	SO 252	11.2	7/16	SO 115	SO 219
0.075	200	SO 147	SO 249	12.5	1/2	SO 116	SO 218
0.09	170	SO 146	SO 248	16	5/8	SO 114	SO 216
0.106	140	SO 145	SO 247	19	3/4	SO 113	SO 215
0.125	120	SO 144	SO 246	22.4	7/8	SO 112	SO 214
0.15	100	SO 143	SO 245	25	1	SO 111	SO 213
0.18	80	SO 142	SO 244	31.5	1, 1/4	SO 109	SO 211
0.212	70	SO 141	SO 243	37.5	1, 1/2	SO 108	SO 210
0.25	60	SO 140	SO 242	45	1, 3/4	SO 107	SO 209
0.3	50	SO 139	SO 241	50	2	SO 106	SO 208
0.355	45	SO 138	SO 240	63	2, 1/2	SO 104	SO 160
0.425	40	SO 137	SO 239	75	3	SO 103	SO 159
0.5	35	SO 136	SO 238	90	3, 1/2	SO 102	SO 158
0.6	30	SO 135	SO 237	100	4	SO 101	SO 157
0.71	25	SO 134	SO 236	125	5	-	SO 156
0.85	20	SO 133	SO 235	Washing sieve		SO 154	-
1	18	SO 132	SO 234	Cap		SO 153	SO 255
1.18	16	SO 131	SO 233	Pan		SO 152	SO 254
1.4	14	SO 130	SO 232				
1.7	12	SO 129	SO 231				
2	10	SO 128	SO 230				
2.36	8	SO 127	SO 229				
2.8	7	SO 126	SO 228				
3.35	6	SO 125	SO 227				
4	5	SO 124	SO 226				
4.75	4	SO 123	SO 225				

Soil

Sieve Holders

Sieve Holders used for holding and easier access to sieves, there are two different types of sieve holders:

- Wall mount holder
- Bench holder

Model	SO 371	SO 370
Description	Sieve Wall Mount Holder	Sieve Bench Holder
Dim.LxWxH	760x260x200mm	760x200x160mm
Weight(Approx.)	2.4kg	2kg

SO 370

Sieve Cleaning Brush

Sieve Cleaning Brush set used for cleaning sieves after each time of use.

Model	SO 403	SO 402	SO 401	GE 165
Description	Fine Sieve Cleaning Brush	Soft Hair Sieve Cleaning Brush - Thin Size	Soft Hair Sieve Cleaning Brush Thick Size	Wire Scratch Brush

Electrical Sieve Shaker Used for 8&12in Frames

Electrical Sieve Shaker manufactured by Azmoon has the capacity for eleven 8 Inches diameter or eight 12 in diameter sieves. which is set to obtain the best result with sand and aggregates. Right and left sieving motion increase the speed of sieving and help to obtain the best result with sand and aggregates. This apparatus has a timer.

Electrical Sieve Shaker Used for 18in Frames

This apparatus is as same as Electrical Sieve Shaker Used for 8 And 12 Inches Frames, equipped to a timer and has capacity for ten 18 inches' diameter sieves.

Model	SO 410	SO 420
Description	Electrical Sieve Shaker Use for 8&12in Frames	Electrical Sieve Shaker Use for 18in Frames
Power Supply	250W, 220V, 50Hz,1ph	250W, 220V, 50Hz,1ph
Dim.LxWxH	500x300x1200mm	600x600x1100mm
Weight(Approx.)	40kg	70kg

SO 410

Soil Samplers

Soil Sampler (Core Cutter) is used to determine the in-situ density of soil by taking a standard volume of soil sample from the ground which is then removed, trimmed and weighed.

Disturbed and Undisturbed Soil Samplers

ASTM D2937

Disturbed soil sampler used where only properties of the soil grains (e.g., grain size distribution and possibly the water content) should be determined accurately. In disturbed samples, properties of the soil will not be representative of in-situ conditions.

Undisturbed soil sampler used where the condition of the soil in the sample should be close enough to the conditions of the soil in-situ.

.Disturbed soil sampler made of aluminum in two different size: 38 mm and 50 mm

Undisturbed soil samplers made of galvanized steel in two different inner diameter sizes 38 .mm and 50 mm

Model	SO 439	SO 440	SO 441	SO 442	SO 443
Description	Disturbed Soil Sampler	Disturbed Soil Sampler	Undisturbed Soil Sampler	Undisturbed Soil Sampler	Undisturbed Soil Sampler
Dim.DxH	38x76mm	50x100mm	38x76mm	38x200mm	50x100mm
Weight(Approx.)	150g	350g	80g	200g	250g

Soil Sample Extruders

Soil Sampler Extruder used to extrude or compress the disturbed or undisturbed soil specimens from the sample tube.

Model	SO 444	SO 445
Description	Soil Samlpe Extruder	Soil Samlpe Extruder
Size	38mm	50mm
Weight(Approx.)	50g	150g

Soil

Core Cutter Soil Samplers

Core Cutter or Surface Soil Sampler is used to determine the in-situ density of soil by taking a standard volume of soil sample from the ground, trimmed and weighed. Core Cutter Soil Sampler consist of steel drive head, drive hammer and 4 in to 6 in tubes.

Model	SO 433	SO 433-1	SO 433-2	SO 433-3	SO 434	SO 434-1	SO 434-2	SO 434-3
Description	Core Cutter Soil Sampler	Drop Hammer	Sampling Tube	Sampling Cutter	Core Cutter Soil Sampler	Drop Hammer	Sampling Tube	Sampling Cutter
Size	4in	4in	4in	4in	6in	6in	6in	6in
Material	Electrostatic Painted Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel	Electrostatic Painted Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel
Weight (Approx.)	6.5kg	4kg	2kg	0.6kg	12.5kg	9kg	4kg	0.8kg

Soil Hand Augers

ASTM D1452, D420
BS 5930
One of the easiest way for sampling of soil is using Augers. Soil Hand Auger Consist of a T handle, 2, 3, 4 in head and a carrying bag.

Model	SO 454	SO 455	SO 456	SO 457	SO 458-1	SO 458-2	SO 458-3
Description	Hand Auger Set with Carrying Case	2in Hand Auger	3in Hand Auger	4in Hand Auger	Extension Rod 100cm	Extension Rod 50cm	T handle
Material	Steel, Baked colour	Steel, Baked colour	Steel, Baked colour	Steel, Baked colour	Steel, Baked colour	Steel, Baked colour	Steel, Baked colour
Weight (Approx.)	8.2kg	950g	1500g	2500g	1800g	800g	660g

Soil Lathe

Designed to reduce by trimming the diameter of a soil sample until reaching the desired diameter size (38 mm to 100 mm) by using a wire saw. The lathe is hand-operated; the height is adjustable up to 230 mm

Model	SO 460
Description	Soil Lathe
Dim.DxH	20x240mm
Weight(Approx.)	9kg

Soil

Liquid Limit Cone Penetrometer

BS 1337-2
ISIRI 7823
A Liquid Limit Cone Penetrometer is used to determine the moisture content at which clay soils pass from a plastic to a liquid state, and used also for the determination of undrained shear strength.
The apparatus equipped to an analogue penetration measurement gauge 0.01 mm resolution/readability. Also its possible to measure time with a 1 sec resolution timer unit.

Model	SO 470	SO 470-1	SO 470-2
Description	Liquid Limit Cone Penetrometer	Penetration Test Cone	Penetration Test Cup
Dim.LxWxH	360x140x140mm	35mm, long 30˚ angle	Dia. 55, H 35mm
Weight(Approx.)	3kg	80g	50g

Casagrande Method for Liquid Limit Apparatus

ASTM D4318
BS 1377-2
AASHTO T89
ISIRI 10731
Used to determine the moisture content at which clay soils pass from a plastic to a liquid state.
Casagrande apparatus used in two different type: Manual and motorized.
This device consists of Metal grooving tool, brass cup, counter, bakalit base and plastic grooving tool flexible spatula.

Model	SO 471	SO 472	SO 473	SO 474	SO 500	SO 501
Description	Hand Operated Casagrande Apparatus	Motorized Casagrande Apparatus	Grooving Tool, Meets ASTM D4318	Grooving Tool, Meets AASHTO T89	Spatula 20mm	Spatula 15mm
Dim.LxWxH	140x200x160mm	300x200x180mm	110x40x110mm	30x20x110mm	15x20x220mm	15x15x200mm
Weight(Approx.)	2.5kg	11kg	15g	100g	46g	25g

Shrinkage Limit Set

SO 490

ASTM D427
AASHTO T-92
Shrinkage Limit Set Used to determine the maximum moisture content at which the soil does not shrink after drying the sample. Shrinkage limit set consists of:

- Evaporating dish
- Shrinkage prong plate. Manufactured from transparent acrylic and fit with 3 metal prongs
- Shrinkage dish
- Crystallizing dish
- Flexible spatula 20 mm
- Graduated cylinder

Model	SO 490	SO 491	SO 492	SO 493	SO 500	SO 501
Description	Shrinkage Limit Set	Shrinkage Prong Plate	Cup	Shrinkage dish	Spatula 20mm	Spatula 15mm
Material	-	Plexiglass	Stainless Steel	Glass	Stainless Steel	Stainless Steel
Dim.LxWxH	-	100x100x5mm	Dia4.5x17mm	Dia 90mm	15x190x20mm	15x160x15mm
Weight (Approx.)	220g	30g	27g	30g	25g	20g

Soil Mechanical Stirrer

ASTM D422
AASHTO T88
ISIRI 7518
For dispersing soil suspensions used in hydrometer method of testing subgrade soils, heavy-duty mixer operates at a speed around 10,000 rpm. Motor of the device has heat protection systems.

SO 510

Model	SO 510
Description	Mechanical Stirrer 10000rpm
Power Supply	100W, 220V, 50Hz,1ph
Dim.LxWxH	200x240x500mm
Weight(Approx.)	4kg

Soil

Sedimentation Cylinder

ASTM D422
AASHTO T88
ISIRI 19898

Transparent and glass made sedimentation cylinder used for hydrometric tests. The cylinder diameter is 63.5 mm and volume of the sedimentation cylinder is 1000 cc. The rubber bung for sedimentation cylinder should be ordered separately.

Model	SO 512	SO 513
Description	Sedimentation Cylinder 1000cc	Rubber Cap
Weight(Approx.)	570g	5g

Soil Hydrometer

ASTM E126, E100
ISIRI 19898

Soil hydrometer 151 H & 152 H are used in particle size analysing test.

Model	SO 533	SO 534
Description	Soil Hydrometer 152H	Soil Hydrometer 151H

Model	SO 514	SO 520	SO 525
Description	Manual Stirre	Sodium Hexametaphosphate	Distilled Water 20litre
Weight(Approx.)	140g	1000g	20kg

Sand Equivalent Test Set

ASTM D2419
AASHTO T176
ISIRI 1685

The Sand Equivalent test set is used to determine the fines of aggregates.

Sand Equivalent Test Set is supplied complete with:

- Transparent measuring cylinder QTY: 4
- Rubber bung QTY: 4
- Graduated rule 500 mm, stainless steel
- Plastic funnel
- Plastic can: 4 liters
- Digital stopwatch
- Steel cup
- Weighted foot assembly for sand level
- Irrigator tube with stopwatch

Also ordering their accessories separately accepted.

Model	SO 540	SO 541	SO 542	SO 546	SO 547	SO 549	GE 184
Description	Complete Set for Sand Equvalent Test	Plexiglass Measuring Cylinder with Rubber Cap	Weighted Foot Assembly for sand level	Steel Cup	Irrigator Tube with Stopcock and Syphon Assmebly	Plastic bottle 4L. Capacity	Digital Stopwatch
Qty. Per Package	-	4	1	1	1	1	1
Dim.LxWxH	-	100x100x435mm	50x470mm	38cc Capacity	-	-	-
Weight (Approx.)	-	280g	1000g	50g	100g	-	-

Soil

Motorized Sand Equivalent Shaker

ASTM D2419
AASHTO T176
ISIRI 1685
Sand Equivalent Shaker is used for the uniform shaking of Sand Equivalent Measuring Cylinders, at a specified rate and stroke. Frequency of vibration of device is 175±3 No. per minutes.

SO 560

Model	SO 560
Description	Motorized Sand Equivalent Shaker
Power Supply	0.37kW, 220V, 50Hz,1ph
Dim.LxWxH	600x300x550mm
Weight(Approx.)	40kg

Concentrated Stocks Solution

ASTM D2419
ISIRI 1685
Concentrated stocks solution used for sand equivalent value of soils and fine aggregate test.

SO 550

Model	SO 550
Description	Concentrated Stock Solution 1000cc

Automatic Soil Compactor

ASTM D558, D559, D560, D698, D1557, D1883
AASHTO T99, T180, T193
EN 13286-47
BS 1377-4
ISIRI 1158, 668

Automatic Soil Compactor is designed to compact specimens automatically and uniformly, based on international standards. Compactor automatically compacts and rotates mold after each blow while keeping track of the number of hammer blows and shutting off once a preset number of blows is reached. Design of Azmoon Soil Compactor allows the hammer to drop the required height into the soil in the mold which rotates circularly to distribute the blows uniformly over the surface of the specimen in the mold. The unit can be used to perform standard or modified compaction tests using a 5.5 lb. hammer with 12" height of drop or a 10 lb. hammer with 18" drop or CBR test specimens.

SO 610

Model	SO 610
Description	Automatic Soil Compactor
Power Supply	0.37W, 220V, 50Hz,1ph
Dim.LxWxH	260x430x1500mm
Weight(Approx.)	90kg

Soil Proctor Mold Extruder

ASTM D698, D1587, D1883
ISIRI 1158, 668

The specimen extruder is designed to easily extrude specimens from Marshall, CBR, standard and modify Proctor Molds.
There is a 50 kN capacity handy jack that used to extrude specimen from 4 to 6 in molds. Also it is possible to order a plus device to extrude 38 mm to 50 mm specimen from molds.

SO 620

Model	SO 620
Description	Soil Proctor Mold Extruder
Capacity	50kN
Dim.DxH	280x440mm
Weight(Approx.)	25kg

Soil

Soil Proctor Mold & Hammer

ASTM D558, D559, D560, D698, D1557
BS 1377-4, 1924-2
ISIRI 1158, 668
Molds and rammers are used for determining the relationship between the moisture content and density of compacted soil. The mold includes collar, mold body and base plate. The rammer construction includes a guide sleeve with vent holes. All parts covered by a galvanized layer.

Model	SO 570	SO 580	SO 590	SO 600
Description	4in Compcation Mold	6in Compcation Mold	5.5lb. Compaction Hammer	10lb. Compaction Hammer
Material	Galvanized Steel	Galvanized Steel	Steel, Baked Colour	Steel, Baked Colour
Weight(Approx.)	4.5kg	6.5kg	4.5kg	7.5kg

Sand Density Cone Apparatus

ASTM D1556
BS 1377-9, 1924-2
AASHTO T191
ISIRI 13549

This set of Apparatus used for determining the degree of compaction on site by a simple procedure consisting essentially in removing and weighing a part of compacted soil and replacing in the hole with sand by a simple apparatus recording the volume of sand and then calculating the density of the removed soil.

Model	SO 690	SO 700	SO 691	SO 692	SO 693	SO 701	SO 702	SO 703
Description	Sand Cone Test Complete Set	Sand Cone Test Complete Set	Sand Cone	Base Plate	Calibration Container	Sand Cone	Base Plate	Calibration Container
Material	-	-	Aluminium - PVC	Aluminium	Aluminium	Aluminium - PVC	Aluminium	Aluminium
Dia.	4in	6.5in	4in	4in	4in	6.5in	6.5in	6.5in
Weight(Approx.)	3.9kg	7kg	2.1kg	1kg	0.8g	3.7kg	1.8kg	1.5kg

Standard Sand for Density Test

ASTM D1556
BS 1377-9, 1924-2
AASHTO T191
ISIRI 13549

This standard sands used for density test and are in 20 kg packages.
This standard sand is based on ASTM D1556.

Model	SO 715
Description	Standard Sand For Soil Density Test
Weight(Approx.)	20kg per package

Soil

Field CBR Test Loading Set

ASTM D1883, D4429
BS 1377-4
AASHTO T193
ISIRI 1159

CBR test can be performed not only in laboratory but also in-situ. The field CBR testing equipped to a 30 kN load ring with a displacement gauge 30 mm-0.01 mm. The set consists of:

- 50 kN capacity mechanical jack with ball seating
- 50 kN capacity load ring
- Analogue penetration dial gauge (30 mm travel x 0.01 mm)
- Adjustable dial gauge holder
- CBR Penetration piston

SO 630

Hand Operated CBR Test Machine

ASTM D1883, D4429
BS 1377-4
AASHTO T193
ISIRI 1159

Hand Operated CBR Test Machine equipped to a 30 kN loading rings set with a 0.002 mm resolution displacement gauge and another gauge with 0.01 mm resolution and 30 mm stroke to measure penetration.

SO 631

Motorized CBR Test Machine with Proving Ring

ASTM D1883
BS 1377-4
AASHTO T193
ISIRI 1159

Motorized CBR Test Machine equipped to a 30 kN load rings and a 0.002 mm resolution displacement gauge and another displacement gauge with 0.01 mm resolution gauge ion and 30 mm stroke to measure penetration.

A Gearmotor with a constant 1.27 mm/min load rate used for loading.

SO 640

Digital CBR Test Machine

ASTM D1883
BS 1377-4
AASHTO T193
ISIRI 1159

Digital CBR Test Machine with a digital indicator equipped to a 30 kN load cell with the resolution of 10 N and a displacement gauge with 0.01 mm resolution with a 30 mm stroke used for measure penetration.

A Gearmotor with a constant 1.27 mm/min load rate used for loading. The applied load shows on a digital indicator.

SO 638

All CBR machines loading rate are 1.27 mm/min, based on customers required it's possible to manufacture 1 mm/min loading rate CBR base on BS-EN 1377- 4 standard. Applied load show on indicator.

Soil

Automatic CBR Test Machine

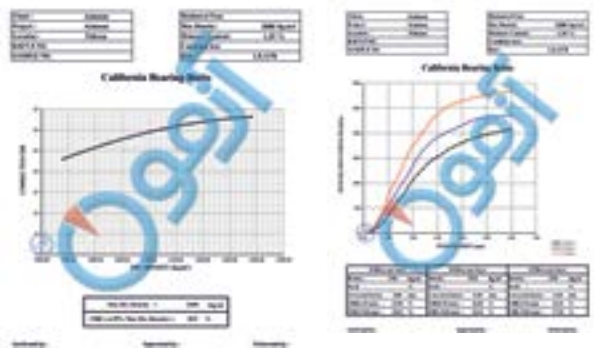
ASTM D1883
BS 1377-4
AASHTO T193
ISIRI 1159

Automatic CBR test machine equipped to a 30kN and 10N resolution load cell, and a 0.01mm distance gauge to determine penetration. In this system loading done with an electrical Gearmotor.

All steps of CBR test has been done automatically.

Technical Specification

- 4x16 LCD with Back light indicator
- Uniformly loading thanks to Gearmotor
- 30 kN load cell with 10N resolution
- Serial Port to communicate with PC
- LVDT sensor to determine penetration and determine CBR of soil
- Real time data showing
- Overload protection system
- Limited switch with 50mm stroke
- PLC controlling system
- Automatic Stop at failure point
- RS232 serial port
- Software calibration



Model	SO 630	SO 631	SO 640	SO 638	SO 639
Description	Field CBR Test Loading Set	Hand Operated CBR Test Machine	Motorized CBR Test Machine	Digital CBR Test Machine	Automatic CBR Test Machine
Power Supply	0.37kW, 220V, 50Hz,1ph	0.37kW, 220V, 50Hz,1ph	0.37kW, 220V, 50Hz,1ph	0.37kW, 220V, 50Hz,1ph	0.37kW, 220V, 50Hz,1ph
Indicator	Proving Ring	Proving Ring	Proving Ring	Digital LCD 1x16 backlight	Digital LCD 4x16 backlight made in Taiwan
Capacity	30kN	30kN	30kN	30kN	30kN
Resolution	33-37N	33-37N	33-37N	10N	10N
Flowmeter	Dial indicator.30mm, Div. 0.01mm	Dial indicator.30mm, Div. 0.01mm	Dial indicator.30mm, Div. 0.01mm	Dial indicator.30mm, Div. 0.01mm	Digital displacement Transducer 50mm, Div. 0.01mm
Reporting Software	-	-	-	-	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	520x400x1300mm	520x400x1300mm	530x360x1300	570x450x1200	530x360x1300
Weight (Approx.)	70kg	70kg	90kg	95kg	90kg
Stroke Limit Switch	50mm	50mm	50mm	50mm	50mm

CBR/Marshall

CBR/Marshall Apparatus is summation of CBR device and Marshall test machine. This apparatus manufacture to optimized time and space. By changing Jaws of apparatus, it is possible to change device from CBR to Marshall or from marshal to CBR.

Motorized CBR-Marshall Compression Machine

ASTM D1883, D1559, D6927
BS 1377-4
AASHTO T193, T245
ISIRI 1159, 12381

Motorized CBR-Marshall compression Machine equipped to a 30 kN loading ring and a 0.002 mm displacement gauge. Also a stop watch exists to measure time of penetration in models. In this device loading done by Gearmotor.

Technical Specification

- Uniform distribution load thanks to Gearmotor
- 50.8 mm/min uniform loading rate for Marshal test and 1.27 mm/min uniform loading rate for CBR test
- 30 kN capacity load ring
- Equipped with flowmeter (30 mm travel x 0.01 mm)
- Ease of use
- Limited switch

Digital CBR/Marshall Test Machine

ASTM D1883, D1559, D6927
BS 1377-4
AASHTO T193, T245
ISIRI 1159, 12381

Digital CBR/Marshal Test Machine with digital indicator equipped to a 30 kN load cell and a 0.01 mm resolution flowmeter. In this device loading done by a Gearmotor. Applied force to specimen show on digital indicator.

Technical specification

- 50.8mm/min uniform loading rate thanks to Gearmotor for Marshal test and 1.27mm/min uniform loading speed for CBR test
- 30kN load cell with 10N resolution
- Analogue flow meter (30mm travel x 0.01mm)
- Real time data showing
- Limited switch

All CBR machines loading rate are 1.27 mm/min, based on customers required it's possible to manufacture 1 mm/min loading rate CBR base on BS-EN 1377- 4 standard. Applied load show on indicator.

Soil

Automatic CBR/Marshall Test Machine

ASTM D1883, D1559, D6927
BS 1377:4
AASHTO 193-99,T245
ISIRI 1159, 12381

In Automatic CBR/Marshall Test Machine after putting specimen in mold and press start button, all steps of test run automatically and when test finished all data like force at failure point (N) and evaluation of the CBR value shows on indicator.

Technical Specification

- 4x16 LCD with backlight indicator
- Uniform distribution load thanks to Gearmotor
- 30 kN load cell with 10 N resolution
- Serial communication port to connect to PC
- Online plot force-flow graph in Marshall or stress-penetration in CBR
- Real time force indicator
- 50 mm stroke LVDT sensor with 0.01 mm resolution
- Limited switch
- Overload protection system
- PLC control system
- RS232 serial port

SO 636

Model	SO 634	SO 635	SO 636
Description	Motorized CBR-Marshall Compression Machine	Digital CBR-Marshall Compression Machine	Automatic CBR-Marshall Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Indicator	Proving Ring	Digital LCD 2x16 backlight	Digital LCD 4x16 backlight made in Taiwan
Capacity	30kN	30kN	30kN
Resolution	33-37N	10N	10N
Flow meter	Dial Indicator 30mm, Div. 0.01mm	Dial Indicator 30mm, Div. 0.01mm	Digital displacement Transducer 50mm, Div. 0.01mm
Reporting Software	-	-	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	360x530x1400mm	360x530x1400mm	360x530x1400mm
Weight(Approx.)	90kg	90kg	90kg
Stroke Limit Switch	50mm	50mm	50mm

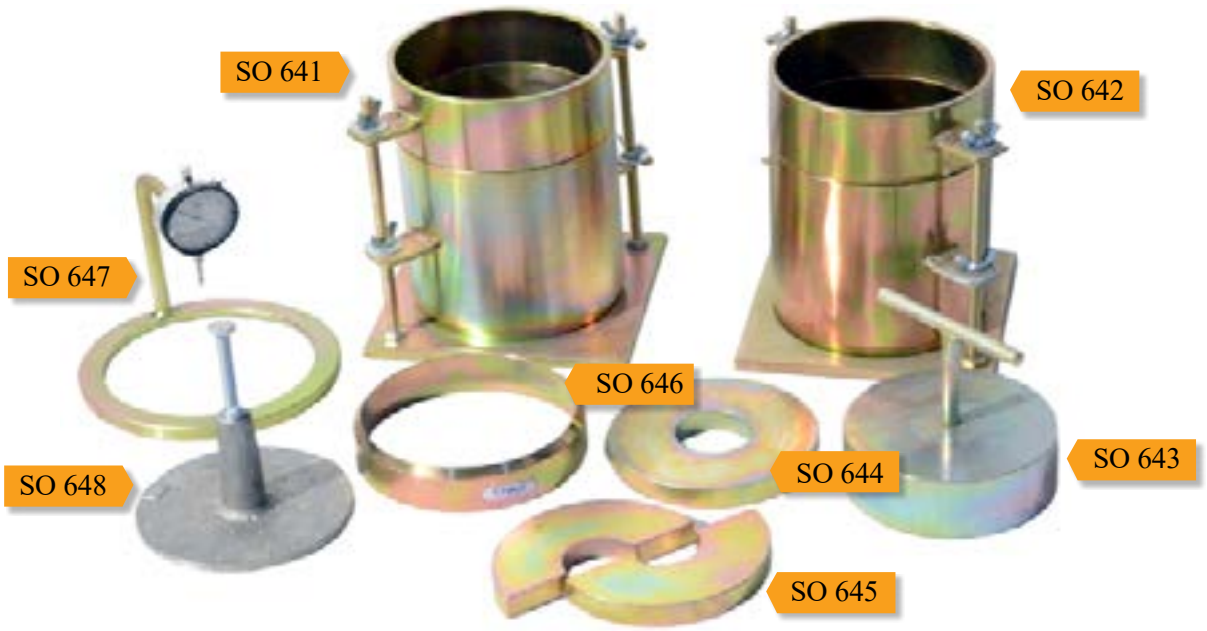
CBR Testing Equipment

ASTM D1883
BS 1377-4
AASHTO T193
ISIRI 1159

All equipment for CBR testing made of steel and covered with a layer of high quality galvanized based on international standard.

All below equipment should be ordered separately:

- CBR mold with perforated plate
- CBR mold with collar plate
- CBR Solid Base Plate
- Annular Surcharge
- Cutting edge
- Tripod dial gauge
- Swell plate
- Spacer disc with “T” handle



Model	SO 641	SO 642	SO 643	SO 644	SO 645	SO 646	SO 647	SO 648
Description	CBR Mold with Perforated Plate	CBR Mold with Collar Plate	Spacer Disc with T Handle	Surcharge Weight 2.27kg	Splitted Surcharge Weight 1.13kg	Cutting Edge	Tripod Dial Gauge 30mm, 0.01mm	Swell Plate
Qty. Per Package	1	1	1	1	2	1	1	1
Dim.DxH	6x7in	6x7in	150x150mm	150x20mm	150x20mm	190x170mm	165x200mm	150x200mm
Weight(Approx.)	8.8kg	8.8kg	7.5kg	2.27kg	1.13kg	1000g	1.1kg	0.5kg

Soil

Falling Head Soil Permeability Apparatus

BS 1377-5
ISIRI 14420
Falling Head Permeability Apparatus is used to study the behavior of soil, particularly fine-grained soils such as clay-like or silty soils, with respect to water flow. Falling Head Permeability Cell is manufactured from plated steel with an inside diameter of 4 in.
Also it's possible to use 6 inches mold for permeability test.

Model	SO 652	SO 653
Description	Falling Head Soil Permeability	Falling Head Soil Permeability Cell
Material	Steel Body	Galvanized Steel Body
Apparatus Dim.LxWxH	60x220x1650cm	-
Cell Inside Dim.D	-	4in
Weight(Approx.)	6.3kg	3.9kg

Constant Head Soil Permeability Apparatus

ASTM D2434
BS 1377-5
ISIRI 14420
The soil permeability is a very important factor to study the behavior of soil in its natural condition with respect to water flow. The constant head method is particularly suitable for relatively coarse grained soil such as sands and gravel.

Model	SO 656	SO 654
Description	Constant Head Soil Permeability	Costant Head Soil Permeability Cell
Material	Steel Body	Plexiglass
Apparatus Dim.LxWxH	60x160x1650cm	-
Cell Inside Dim.DxH	-	100x400mm
Weight(Approx.)	4.3kg	4.4kg

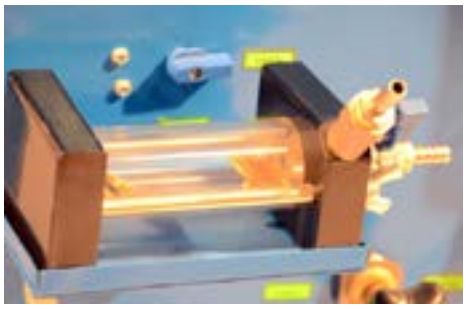
Pinhole Test Apparatus

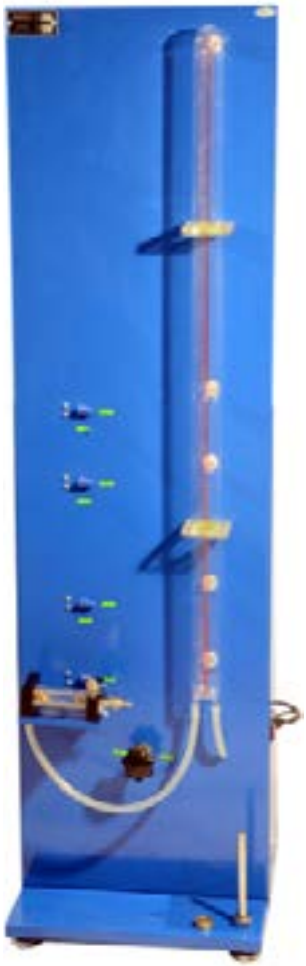
ASTM D4647

BS 1377-5

Pinhole Test Apparatus is used for evaluating the erodibility of clay soils by flowing water through a small hole that is drilled through the compacted specimen. Pinhole test Apparatus consist of: cylindrical container, Pinhole Mold and 1 mm Pinhole needle.

Model	SO 649	SO 650	SO 651
Description	Pinhole Dispersion Test Apparatus	Pinhole Mold	Pinhole
Dim.LxWxH	450x500x1450mm	-	1mm
Weight(Approx.)	30kg	-	-





SO 649

Soil

Consolidometer

ASTM D2435, D4546, D4186, D3877
BS 1377-5
AASHTO T216
ISIRI 6932

Consolidometer apparatus used to determine consolidation of undisturbed soil. Body of Consolidometer manufactured of rigid and machinery aluminum, so base in this quality of manufacturing long time loading is possible. The frame is designed to load the specimen through a lever arm assembly and one of three alternative beam ratios as 9:1, 10:1 and 11:1.

The displacement measured by a 0.002 mm resolution gauge.

Consolidometer set consist of:

- 50 mm or 61.5 mm or 71.5 mm or 75 mm Cell quantity: 1
- Sets of Weight consist of:

(3) 8kg; (2) 4kg; (1) 2kg; (1) 1kg

- Displacement gauge (0.002 mm) quantity: 1

Base of customers request it is possible to replace displacement gauge with a 0.01 mm resolution one.

Automatic Consolidometer

ASTM D2435, D4546, D4186, D3877
BS 1377-5

Same as Consolidometer apparatus, Automatic Consolidometer used to determine consolidation of undisturbed soil, but in this device all steps of measurement done automatically.

Technical Specification

- Automatically working base on ASTM D2435
- RS232 Serial port for PC
- Limited switches
- 12.7 mm stroke LVDT sensor with 0.002 mm resolution.
- Data collection and reporting of test results
- Showing test steps to operator
- Software Calibration
- Adjustable setting for each steps duration

Model	SO 660	SO 661
Description	Consolidometer	Automatic Consolidometer
Indicator	Dial Gauge	7in Touchscreen LCD
Dim.LxWxH	600x300x550mm	400x600x600mm
Weight(Approx.)	25kg	60kg

Consolidation bench

Bench for Consolidation has the capacity of 3 Oedometer Capacity.

SO 665

Model	SO 665
Description	Consolidation bench
Material	Steel
Dim.LxWxH	970x550x900mm

Consolidation Accessories

35 kg weights base on below table

Weight	1kg	2kg	4kg	8kg
Qty	1	1	2	3
Material	Cast Iron	Cast Iron	Cast Iron	Cast Iron

SO 663 – a full set of standard weights

Standard cells of Consolidometer apparatus

Model	SO 662	SO 662-1	SO 662-2
Description	Consolidation Cell	Consolidation Cell	Consolidation Cell
Dia.	50mm	61.5mm	71.5mm
Material	Brass and Plexiglass	Brass and Plexiglass	Brass and Plexiglass

Bigger in size cells that use for bigger soil specimen exist and could order separately.

Dimensions of bronze porous filter

Model	SO 669-1	SO 669-2	SO 669-3	SO 669-4	SO 669-5	SO 669-6	SO 669-7	SO 669-8
Description	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter
Size	38mm	50mm	61.5mm	71.5mm	100mm	75mm	83mm	94mm
Thickness	3mm	3mm	3mm	3mm	3mm	3mm	3mm	3mm
Material	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze

In compare of porous stones, bronze porous filters Penetrability is much better. Also because of a protecting bronze layer, bronze porous filters have more life time.

Soil

Motorized Unconfined Compressive Strength Machine

ASTM D2166
AASHTO T208
BS 1377-7

Unconfined compression tests quickly provide approximate strength values of cohesive soils. This test can be performed on intact, remolded or reconstituted soil specimens using strain-controlled application of axial loads.

The device equipped to a 5kN with a resolution of 2.5 N Loading ring and there is a 30 mm stroke with 0.01 mm resolution. Gearmotor of unconfined compressive machine is Japan made. Loading system operate uniformly with the rate of 1.27 mm/min and without any vibration. The machine could measure specimen with diameter of 38 mm, 50 mm, 75 mm.

SO 680

Digital Unconfined Compressive Strength Machine

ASTM D2166
AASHTO T208
BS 1377-7

This device equipped to a 5 kN load cell with a resolution of 2.5 N. also the displacement gauge has 30 mm stroke with the resolution of 0.01 mm. Gearmotor of machine is Japanese and Loading system operate uniformly with the rate of 1.27 mm/min without any vibration.

SO 683

Automatic Unconfined Compressive Strength Machine

ASTM D2166
AASHTO T208
BS 1377-7

This machine equipped to a 5 kN load cell with a resolution of 2.5 N and a LVDT sensor. A Japanese stepper motor with gear box used in machine and Loading system operate uniformly with the rate of 1.27 mm/min without any vibration.

Technical Specification

- 4x16 LCD with backlight indicator
- Gearmotor with uniform loading in output
- 5 kN load cell with a resolution of 2.5 N
- Real time force indicator
- RS232 serial port for PC
- Automatic stop at failure point
- LVDT sensor to measure deformation
- Maximum and real time force indicator
- PLC controlling system
- Automatic overload detection

SO 680

Model	SO 680	SO 683	SO 686
Description	Motorized Unconfined Compressive Strength Machine	Digital Unconfined Compressive Strength Machine	Automatic Unconfined Compressive Strength Machine
Power Supply	0.6kW, 220V, 50Hz,1ph	0.6kW, 220V, 50Hz,1ph	4.5N.m
Indicator	Proving Ring	Digital LCD 1x16 backlight	Digital LCD 4x16 backlight - made in Taiwan
Capacity	5kN	5kN	5kN
Resolution	2.5N	2.5N	2.5N
Flowmeter	Dial indicator.30mm, Div. 0.01mm	Dial indicator.30mm, Div. 0.01mm	Digital Displacement Transducer 50mm, Div. 0.01mm
Reporting Software	-	-	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	200x150x600mm	200x150x600mm	430x330x700mm
Weight(Approx.)	25kg	25kg	45kg
Stroke Switches	50mm	50mm	50mm

Relative Density of Cohesionless Soil Vibrating Table and Accessories

ASTM D4253-D4254

BS 812-109

This apparatus equipped to a 1000 W vibrating magnet, vibrating table has two different model base on frequency of vibration: 50-60 Hz and the vibration amplitude is 0.43-0.48 mm.

This apparatus consists of below parts:

- 6 in cylindrical aluminum Mold
- 6 in weight
- 11 in cylindrical aluminum Mold
- 11 in weight

Model	SO 716-1	SO 716-2
Description	Relative Density of Cohesionless Soil Vibrating Table and Accessories	Relative Density of Cohesionless Soil Vibrating Table and Accessories
Power Supply	1000W, 220V, 50Hz,1ph	1000W, 220V, 60Hz,1ph
Dim.LxWxH	760x760x400mm	760x760x400mm
Weight(Approx.)	300kg	300kg

Digital Direct Shear Test Machine (60x60 – 100x100mm)

ASTM D3080
BS 1377-7
ISIRI 18652

Digital Direct Shear Test Machine used for determination of the consolidated drained shear strength of a soil material in direct shear. a 5 kN load cell with a resolution of 1N used in test machine. A Japanese motor used to reach a uniform and without vibration loading.

Technical Specification

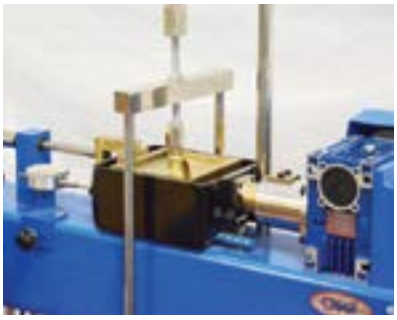
- Gearmotor with uniform loading in output
- 5 kN load cell with a resolution of 1 N
- Adjustable loading rate in range of 0.05 – 10 mm/min
- Japanese Gearmotor
- Real time Maximum and instant force indicator
- Limited switch
- PLC controlling system
- 30 mm horizontal displacement measuring gauge with the resolution of 0.01 mm.
- 10 mm vertical displacement measuring gauge with the resolution of 0.01 mm.

Model	SO 719	SO 720
Description	Digital Direct Shear Machine - Specimen Box 60x60mm	Digital Direct Shear Machine - Specimen Box 100x100mm
Power Supply	200W, 220V, 50Hz,1ph	200W, 220V, 50Hz,1ph
Indicator	Digital LCD 4x16 backlight - made in Taiwan	Digital LCD 4x16 backlight - made in Taiwan
Capacity	5kN	5kN
Resolution	1N	1N
Dim.LxWxH	270x900x1050mm	270x900x1050mm
Weight(Approx.)	110kg	110kg
Stroke Switches	50mm	50mm

Soil

Accessories

Model	SO 722-1	SO 725-2	SO 721-1	SO 728-2	SO 727-1
Description	Direct Shear Box - complete set	Sample Cutter	Perforated Plates	Sample Extruder	Brass Porous Filter
Material	Brass	Nikel Pated Steel	Brass	Aluminum	Brass
Qty per pkg.	1	1	2	1	1
Size	60x60mm	60x60mm	60x60mm	60x60mm	60x60mm



100x100mm box consists of :

Model	SO 722-2	SO 725-1	SO 721-2	SO 728-1	SO 727-2
Description	Direct Shear Box complete set	Sample Cutter	Perforated Plates	Sample Extruder	Brass Porous Filter
Material	Brass	Nikel plated Steel	Brass	Aluminium	Brass
Qty per pkg.	1	1	2	1	1
Size	100x100mm	100x100mm	100x100mm	100x100mm	100x100mm

Apparatus collection of weights is 35kg and consists of:

Weight	1kg	2kg	4kg	8kg
Qty	1	1	2	3
Material	Cast Iron	Cast Iron	Cast Iron	Cast Iron

Automatic Direct Shear Test Machine (60x60–100x100mm)

ASTM D3080
BS 1377-7
ISIRI 18652
Automatic Direct Shear Test Machine is as same as digital direct shear test machine except in Automatic one used a stepper motor to reach a higher resolution.
Technical Specification

- Gearmotor with uniform loading in output
- 5 kN load cell with a resolution of 1 N
- Adjustable loading rate in range of 0.05 – 10 mm/min
- Japanese Gearmotor
- Real time Maximum and instant force indicator
- Limited switch
- PLC controlling system
- 30 mm horizontal displacement measuring gauge with the resolution of 0.01 mm.
- 10 mm vertical displacement measuring gauge with the resolution of 0.01 mm.

Model	SO 717	SO 718
Description	Automatic Direct Shear Machine - Specimen Box 60x60mm	Automatic Direct Shear Machine - Specimen Box 100x100mm
Power Supply	6.5N.m	6.5N.m
Indicator	Digital LCD touchscreen 7 in - made in Taiwan	Digital LCD touchscreen 7 in - made in Taiwan
Capacity	5kN	5kN
Resolution	1N	1N
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	280x900x1050mm	280x900x1050mm
Weight(Approx.)	120kg	120kg
Stroke Limit Switches	50mm	50mm

Soil

Digital Direct Shear Test Machine (300x300mm)

ASTM D 3080
BS 1377-7
ISIRI 18652

This Digital Direct Shear Test Machine, used for determination of the consolidated drained shear strength of a coarse aggregate soil material in direct shear. The machine equipped to a 50 kN load cell with a resolution of 20 N. With the help of a gear servo-motor amount of vertical load (N) is adjustable and constant in test duration.

Technical Specification

- 7 in touch screen LCD
- Real time showing maximum and instant stress
- Adjustable loading rate in range of 0.05 – 8 mm/min
- 50 mm stroke LVDT sensor with the resolution of 0.01 mm to measure shear deformation
- 30 mm stroke LVDT sensor with the resolution of 0.01 mm to measure shear deformation
- RS232 serial port for PC
- Overload protection
- Limited switch
- Receive data from data logger with serial port
- Save data in .xls format (Excel)

Model	SO 730	SO 731
Description	Digital Direct Shear Test Machine 300x300mm	Automatic Direct Shear Test Machine 300x300mm
Power Supply - Normal Loading	1000W, 220V, 50Hz,1ph	1000W, 220V, 50Hz,1ph
Power Supply - Horizontal Shear Loading	1000W, 220V, 50Hz,1ph	1000W, 220V, 50Hz,1ph
Indicator	Digital LCD 4x16 backlight - made in Taiwan	Digital LCD touchscreen 7 in - made in Taiwan
Capacity -Normal Loading	50kN	50kN
Capacity- Horizontal Shear Loading	50kN	50kN
Resolution	20N	20N
Reporting Software	-	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	650x1450x1550mm	650x1450x1550mm
Weight(Approx.)	450kg	450kg
Vertical Stroke Switches	50mm	50mm
Horizontal Stroke Switches	-	50mm

Automatic Direct Shear Test Machine(300x300mm)

ASTM D 3080
BS 1377-7
ISIRI 18652

This Automatic Direct Shear Test Machine, used for determination of the consolidated drained shear strength of a coarse aggregate soil material in direct shear. The difference between digital and automatic direct shear test machines is in Automatic machine Azmoon use a 1000W servomotor to reach normal stress in range of 0.25-5 kg/cm2 with high accuracy.

Technical Specification

- 7 in touch screen LCD
- Maximum and instant stress showing
- Adjustable loading rate in range of 0.05 – 8 mm/min
- 50 mm stroke LVDT sensor with the resolution of 0.01 mm to measure shear deformation
- 30 mm stroke LVDT sensor with the resolution of 0.01 mm to measure shear deformation
- RS232 serial port for PC
- Maximum and instant force showing
- PLC control system
- Limited switch
- Overload protection
- Software calibration

Software Specification

- Receive data from data logger with serial port
- Save data in .xls format (Excel)
- Plot shear stress to horizontal displacement and vertical displacement to horizontal displacement graph

SO 731

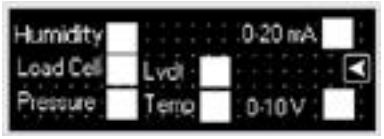
Soil

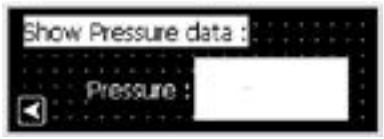
Data Logger

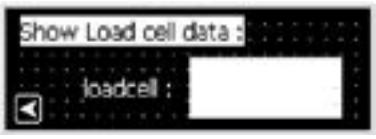
A Data Logger (or data recorder) is an electronic device that records data over time or in relation to location either with a built in instrument or sensor or via external instruments and sensors. Azmoon's data loggers has the ability to read data from force sensors in mV/V, pressure sensors in mA/A and displacement (LVDT) sensors in mA/A. One of the important parameter to choose a data logger is number of input channels. Azmoon has different data loggers in input channels:

- 4 channel data logger
- 8 channels data logger
- 18 channels data logger
- 32 channels data logger

Model	SO 733	SO 734	SO 735	SO 736
Description	4	8	16	32







Digital Triaxial Testing System – UU Test

ASTM D2850
ISIRI 18650
Unconsolidated undrained (UU) test is the most assured test to determine disturbed and undisturbed compression strength of soil properties. stress-strain relation of undisturbed soil specimen is investigated by subjecting the soil sample to different stress levels and draining conditions.
In UU test, the specimens (assumed to be saturated prior to test and usually the height is double of diameter) are subjected to a confining fluid pressure in a Triaxial chamber. Once the specimen is inside the Triaxial cell, the cell pressure is increased to a predetermined value by rotating the knob, and the specimen is brought to failure by increasing the vertical stress by applying a constant rate of axial strain. These tests are generally carried out on three specimens of the same sample subjected to different confining stresses.
Technical Specification

- 20 kN load cell with resolution of 10 N
- 4x16 LCD with backlight indicator
- Equipped to Gearmotor and uniform output loading
- Adjustable loading rate in range of 0.05 – 8 mm/min
- PLC controlling system
- Limited switch
- Automatic stop at failure point
- Software calibration
- Overload protection
- 120 mm loading plate diameter

Device Accessories

- 38 mm pedestal cell
- Pressure transducer and required regulators
- Hydrostatic pressure box quantity: 2

Also air compressor could order separately.

Cyclic & Monotonic Triaxial Test System

ASTM D5311, D3999

Studies and research of under load soil behavior divided in two different categories: dynamic loads & static loads. In dynamic load, scientist studies behavior of structures under cyclic (dynamic) loads like earthquake. Cyclic and Monotonic Triaxial Test System simulate same conditions.

Technical Specification

- Capacity: 25 kN
- 20 kN load cell with the resolution of 10 N
- Pneumatic cyclic loading and Monotonic loading
- ±5 mm displacement amplitude with the frequency range of 0.1-10 Hz.
- 50 mm stroke LVDT sensors with the resolution of 0.01 mm
- 10 bar pressure transmitter
- Isotropic and anisotropic consolidation
- 0.015 – 5 mm/min monotonic uniform loading rate
- Vacuum pump for De-airing of sands and soils
- 70, 50, 38 mm membrane
- 70, 50, 38 mm bronze made filter
- Volume change measurement unit with the resolution of 0.1 cc
- 250-liter capacity 10 bar air compressor
- 8 channels data logger for static and dynamic measurement
- Computer software in LabVIEW environment
- Plot stress-strain, direction-stress, acceleration-time, position-time, velocity-time graphs

Feather to Control Dynamic Load

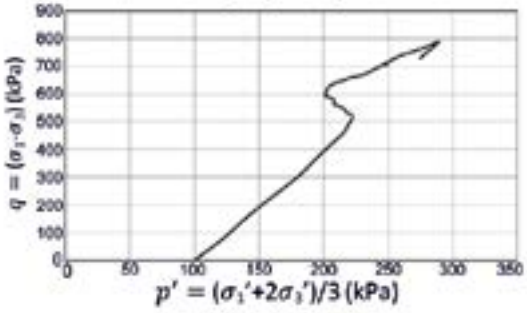
- Irregular dynamic loading like earthquake
- Ability to import earthquake data in excel files
- Dynamic loading with limited stroke
- 0.1 – 10 Hz dynamic load frequency
- Combination of cyclic and monotonic loading
- Automatic control of side and cell pressure

SO 738

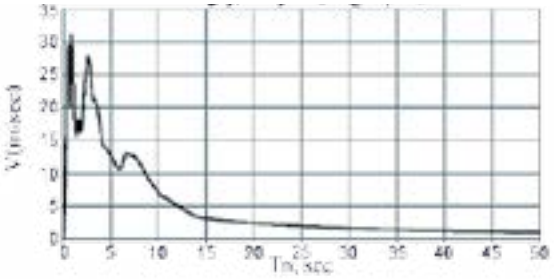
Base on customer order, this device could manufacture for testing 100 mm and 150 mm diameter specimen.

Model	SO 738
Description	Cyclic & Monotonic Triaxial Testing System
Power Supply	220V, 50Hz,1ph
Speed - monotonic	0.015-5mm/min
Displacement Transducer	Digital Displacement Transducer.50mm, Div. 0.01mm
Pressure Readout	kPa
Indicator	Digital LCD touchscreen 7 in
Capacity	20kN
Resolution	10N
Reporting Software	LabVIEW Software Report Generation Software with Microsoft Excel
Platen Size	120mm
Stroke Switches	50mm

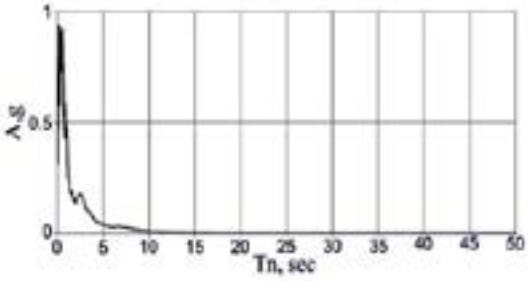
Stress Path Graphic



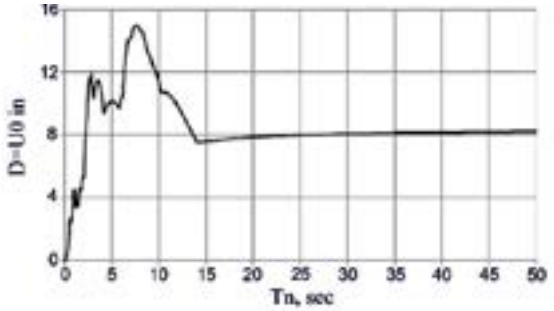
Quasi- Velocity Response Spectrum $\mathcal{E}$- 5%



Quasi- Acceleration Response Spectrum $\mathcal{E}$- 5%



Transform Response Spectrum $\mathcal{E}$- 5%



Digital Triaxial Testing System

ASTM D2850, D4767, D7181
AASHTO T234-90
BS 1377-8
ISIRI 8448, 18650

This device used Unconsolidated undrained (UU) method, consolidated undrained (CU) method and consolidated drained (CD) method to determine soil properties. Digital Triaxial testing system design consist of back pressure, cell pressure, pore pressure and volume change parts.

Technical Specification

- Appropriate for specimen with the size of 75-50-38 mm
- Equipped to Triaxial loading
- Side pressure gauge
- Measurement of pore water pressure

Device Accessories

- 38 mm Triaxial cell or 50 mm Triaxial cell quantity: 1
- 38 mm Triaxial membrane or 50 mm Triaxial membrane quantity: 5
- 60 lit. and 800 kPa air compressor quantity: 1
- Water pressure transparent Plexiglas box quantity: 2
- Side and back pressure panel quantity: 1
- 0.1 ml resolution volume change unit quantity: 1

Technical Specification

- 20 kN load cell with resolution of 10 N
- 4x16 inches' LCD with backlight indicator
- Equipped to Gearmotor and uniform output loading
- Adjustable loading rate in range of 0.05 – 8 mm/min
- Digital control of loading rate
- PLC control system
- Limited switch
- Overload protection
- Software calibration
- 120 mm dia. of loading plate

SO 740

Fully Automatic Triaxial Test System

ASTM D2850, D4767, D7181
AASHTO T234-90
BS 1377:8
ISIRI 8448, 18650

Fully Automatic Triaxial Test System is same as Digital Triaxial Test System except in all parameters like pore pressure, back pressure, cell pressure and volume change measured and showed automatically.

Technical Specification

- Maximum 1000 kPa with resolution of 1 kPa confining and back pressure
- Plot Mohr-Colulomb circle
- Triaxial cell for 38-50 mm specimen equipped to 16 bar pressure transducer and drain valve
- Volume change unit with 0.1 ml resolution
- Two separate confining and back pressure box with capacity of 1000 kPa
- Appropriate for 75-50-38 mm specimen sizes

The apparatus set consist of below accessories

- 16 bar pressure regulator quantity: 2
- Transparent Plexiglas cell with the capacity of 800 kPa quantity: 2
- 38 mm or 50 mm Triaxial cell quantity: 1
- 38 mm or 50 mm Triaxial membrane quantity: 5
- Water pressure transparent Plexiglas box quantity: 2
- air compressor with the capacity 60 liter and 800 kPa working pressure quantity: 1
- volume change unit with the resolution of 0.1 ml quantity: 1
- PC with required configuration

Technical Specification of Loading Jack

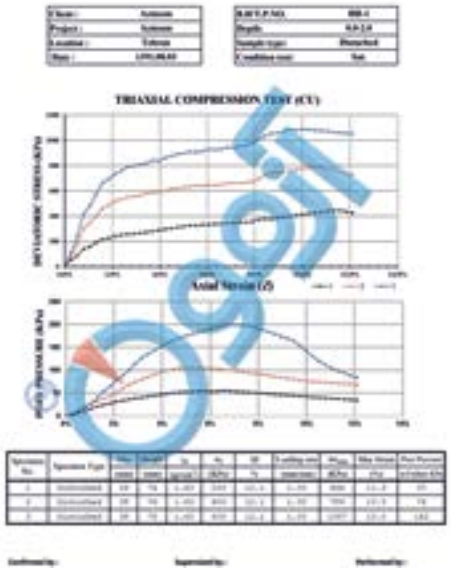
- 10 kN load cell with the resolution of 10 N
- Equipped to Gearmotor and uniform output loading
- Adjustable loading rate in range of 0.05 – 8 mm/min
- PLC control system
- Limited switch
- Software calibration
- 120 mm dia. of loading plate
- Automatic stop after specimen failure

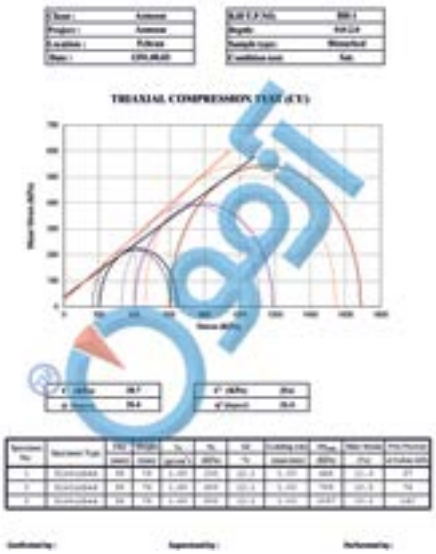
Data Logger Specification

- 7 inches' touch screen LCD indicator
- Software calibration (with help of data logger)
- Indicate Back Pressure, Cell Pressure and Pore Pressure in kPa with the resolution of 1 kPa
- Volume change unit in (ml) with the resolution of 0.1 ml.
- Maximum and instant force indicator
- Strain indicator with the resolution of 0.01 mm.
- RS232 data communication
- Indicate UU-CU-CD test separately.
- Indicate all steps of test in LCD panel
- Save data in .xls format (excel)

Software Specification

- Data collecting with data logger and send data to PC with serial port and online showing on Microsoft excel
- plot stress-strain and Mohr circles and evaluate C and ø automatically.





Also ordering their accessories separately accepted:

- SO 741-1 - Triaxial cell 38mm
- SO 741-2 - Triaxial cell 50mm
- SO 741-3 - Triaxial cell 75mm
- SO 741-4 - Triaxial cell 100mm
- SO 741-5 - Triaxial cell 150mm
- SO 744-1 -Triaxial membrane 38mm
- SO 744-2 - Triaxial membrane 50mm
- SO 744-3 - Triaxial membrane 75mm
- SO 744-4 - Triaxial membrane 100mm
- SO 744-5 - Triaxial membrane150mm
- SO 746– Paper filter of specimen 38mm
- SO 747– Paper filter of specimen 50mm
- SO 748– O-Ring for specimen 38mm
- SO 749– O-Ring for specimen 50mm
- SO 749-1– O-Ring for specimen 100mm

Model	SO 739	SO 740	SO 741
Description	Digital Triaxial Testing System - UU System	Digital Triaxial Testing System	Fully Automatic Triaxial Testing System
Power Supply	220V, DC	400V, 50Hz,1ph, Servomotor	400V, 50Hz,1ph, Servomotor
Speed	0.005-8mm/min	0.005-8mm/min	0.005-8mm/min
Displacement Transducer	Dial indicator.50mm, Div. 0.01mm	Dial indicator.50mm, Div. 0.01mm	Digital Displacement Transducer 50mm, Div. 0.01mm
Pressure Readout	bar	bar	bar
Indicator		Digital LCD 4x16 backlight - made in Taiwan	Digital LCD touchscreen 7 in - made in Taiwan
Capacity	10kN	10kN	10kN
Resolution	10N	10N	10N
Reporting Software	-	-	Includes Processing and Report Generation Software with Microsoft Excel
Platen Size	120mm	120mm	120mm
Stroke Switches	50mm	50mm	50mm

Soil

Sample preparation accessories

Specimen Cells of Triaxial Tests

Specimen Cells of Triaxial Tests made by Azmoon presented in different diameter with below specification

The cells made of transparent Plexiglas with highest stability in test process.

Model	SO 741-1	SO 741-2	SO 741-3	SO 741-4	SO 741-5
Description	Triaxial Cell	Triaxial Cell	Triaxial Cell	Triaxial Cell	Triaxial Cell
Size	38mm	50mm	75mm	70mm	150mm

Triaxial Soil Membrane

Triaxial soil membrane made in USA with highest quality material and below technical specifications

Model	SO 744-1	SO 744-2	SO 744-3	SO 744-4	SO 744-5
Description	Membrane	Membrane	Membrane	Membrane	Membrane
Material	Latex	Latex	Latex	Latex	Latex
Size	38mm	50mm	75mm	100mm	150mm

Bronze Porous Filter

Model	SO 669-1	SO 669-2	SO 669-3	SO 669-4	SO 669-5	SO 669-6	SO 669-7	SO 669-8
Description	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter	Bronze Porous Filter
Size	38mm	50mm	61.5mm	71.5mm	100mm	75mm	83mm	95mm
Thickness	3mm	3mm	3mm	3mm	3mm	3mm	3mm	3mm
Material	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze

Undistributed Soil Sampler

Model	SO 439	SO 440	SO 441	SO 442	SO 443
Description	Disturbed Soil Sampler	Disturbed Soil Sampler	Undisturbed Soil Sampler	Undisturbed Soil Sampler	Undisturbed Soil Sampler
Dim.DxH	38x76mm	50x100mm	38x76mm	38x200mm	50x100mm
Weight(Approx.)	150g	350g	80g	200g	250g

Soil Sample Extruder

Model	SO 444	SO 445
Description	Soil Samlpe Extruder	Soil Samlpe Extruder
Size	38mm	50mm
Weight(Approx.)	50g	150g

Plate Bearing Test

ASTM D1195, D1196

BS 1377:9

Plate Bearing Test is one the most reliable method used to estimate the bearing capacity of a soil under field loading conditions for a specific loading plate and depth of embedment.

The apparatus presented in different capacity: 100, 300, 500, 1000 kN

Model	SO 781	SO 782	SO 785	SO 786
Description	Plate Bearing Test	Plate Bearing Test	Plate Bearing Test	Plate Bearing Test
Plates	150, 200,300mm	200,300, 450mm	200,300, 450mm	200,300, 450mm
Capacity	100kN	300kN	500kN	1000kN
Weight(Approx.)	88kg	100kg	110kg	130kg

Standard Penetration Test Apparatus

DIN 4094

ISIRI 8446

To perform standard penetration to obtain the penetration resistance (N-value) along the depth at a given site.

The apparatus consists of a rod with the length of 1080 mm and a 10 kg hammer.

SO 820

Model	SO 820
Description	Standard Penetration Test
Refrence	DIN 4094
Length	1080mm
Weight(Approx.)	10kg
Size	38mm

Soil

Petrol Standard Penetration Test Apparatus

ASTM D1586
ISIRI 12305-3

The Standard Penetration test (SPT) is a common in situ testing method used to determine the geotechnical engineering properties of subsurface soils. It is a simple and inexpensive test to estimate the relative density of soils and approximate shear strength parameters.

Standard Penetration Test, SPT, involves driving a standard thick-walled sample tube into the ground at the bottom of a borehole by blows from a slide hammer with standard weight and falling distance. The weight of the hammer is 63.5 kg. This hammer falls from a height of 76 cm base on standard.

This apparatus consists of:

- Portable structure
- 63 kg Standard hammer
- CPT head
- SPT head
- 5 hp petrol motor
- 20 m rope
- Heavy duty auger extension rod

Model	830 SO
Description	Standard Penetration Test
Length	10mm
Dim. LxWxH	1800x4500x3000mm
(.Weight(Approx	10kg

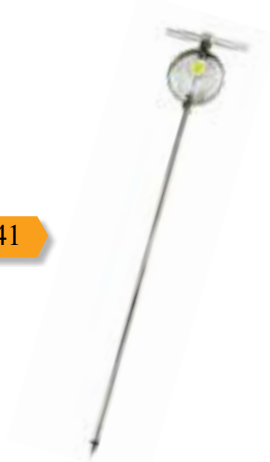
Soil Proving Ring Cone Penetrometer

ASTM D1558, D2573
ISIRI 12305-12

Used to determine the bearing strength, compaction degree of subgrades, and also for determining the penetration resistance of soil.

The apparatus consists of a “T” handle, 1 kN proving ring with maximum load pointer and calibration chart, 500 mm extension rod, removable cone point 30° with 1 in2 top area.

SO 841



Model	SO 841
Description	Soil Proving Ring Penetrometer
Capacity	1kN
Resolution	1N
Length	900mm
Weight(Approx.)	5kg

Soil Pocket Penetrometer

ASTM D1558, D2573

Soil Pocket Penetrometer Designed for making field classification of cohesive soils in terms of consistency, shear strength and approximate unconfined compressive strength.

Model	SO 842
Description	Soil Pocket Penetrometer
Weight	250g

SO 842

Vane Shear Tester (VST)

BS 1377-8

ISIRI 20355

Vane shear device is a practical equipment for determining the shear strength of cohesive soils. VST widely used to perform onsite measurements of excavations covering trenches and test pits, thin-wall or split core samples, by providing a quick and efficient method for shear strength measurements and it is also suitable for laboratory usage. Capacity of device is 0-2.5 kg/cm2.

SO 843

Model	SO 843
Description	Vane Shear Tester

High Tech Soil Test

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Dynamic Triaxial Hollow Cylinder Torsional Device

Code: HT 110

Technical Specification:

- Load Capacity 25 kN
- Nominal Loading 10 kN
- Torsion Loading 10 kN.cm
- Side Loading: pneumatic 8 Bar.
- Pressure of inside Loading: pneumatic 8 Bar.
- Dynamic control method: Stress and Strain Control
- Static Loading: strain control 0.01-5 mm/min
- 500 kPa cyclic with pneumatic operator
- ± 25 mm displacement with the frequency of 4 Hz
- Monotonic loading ability by strain control with the capacity of 100 kPa
- 10 kN.cm Torsion loading of servo motor with the frequency of 5 Hz
- Simultaneous 1 Hz axial and torsion loading
- Maximum pressure frequency tolerance 0.5 Hz

Triaxial Cell Specification:

- Sample Size: 100 mm outer dia., 50 mm inner dia. And 100 mm height.
- 3 support rod inside cell
- Ability to change head and pedestal for different sample size
- Max. Pressure 10 Bar.

Control Panel Specification:

- Adjustable automatic electric valve
- Monitoring side, inside and outside pressure
- Advanced volume change measuring system with the resolution of 0.1 cc
- Electric valve and actuator protecting system against water penetration.

Accessories Specification:

- 250 liters and 8 bar air compressor
- 2.5 m3/hr. Vacuum pump
- Desktop PC

Data Logger and Electronic Controller System:

- 8 analogue to digital channels
- 2 digital to analogue channels
- 16 channels data logger for data acquiring
- 7 inches' touch screen LCD panel
- Ability to control sample saturation base on B Valve standard
- Isotropic and anisotropic consolidation
- Easy Calibration with certification

Software Specification:

- Ability to save data in excel file
- Transfer earthquake data to simulate earthquake
- Pressure data showing with 1 kPa resolution
- Plot Monotonic, Cyclic and Torsion graphs and damping ratio graphs

Sensors Specification

- 5 kN Force sensor with the resolution of 0.1 N
- 30 mm stroke displacement sensor with the resolution of 0.01 mm
- 1 kPa resolution pressure sensor
- 5 kN.cm torque sensor with the resolution of 0.1 kN.cm

High Tech Soil Test

Shaking Table Testing Device

Code: HT 210

Azmoon's Shaking Table Testing Device made and design with one or multi axis base on your requirements. The device made and design base on international standards. Also dynamic actuator fatigue that used increase device trust ability. Ability to use real earthquake data to simulate earthquake. The frequency of dynamic jacks is about 40 Hz.

Shaking Table Testing Device software has the ability to control device base on force and displacement. Also the software could generate square, sine and triangle waves.

Device Features:

- 1 to 3 degree of freedom movement
- Equipped to Thread holes to fix samples
- Hydraulic unit to control table
- Powerful software with DSP technology and high frequency response
- Used the most accurate hardware to increase control accuracy.
- Equipped to cooling system for control temperature
- Using LAN to communicate with PC
- Ability to connect PID controller parameters

Environment Condition

- Humidity: 5 to 60 degree
- Temperature: 50 degrees of centigrade

Technical Specification

- Degree of freedom 1
- Wave Types saw tooth, square, triangle, sine
- Max. Loading Frequency 40 Hz
- Maximum Load 10 ton
- Table dimension 1800 x 1500 mm
- Displacement stroke ± 100 mm
- Maximum acceleration (with 5.7 kg load) 2.5g
- Maximum velocity (with 5.7 kg load) 0.665 m/s
- Tension and Compression Load Cell Capacity 50 kN
- Force sensor resolution 10 N
- Acceleration sensor resolution 0.01g
- Velocity meter resolution 0.01 m/s
- Displacement sensor stroke 100 mm
- Displacement sensor resolution 0.01 mm

Control Panel Specification:

- Hydraulic electrical pump with electric valve, cooling system and servo hydraulic.
- Using protecting system contain overload, over voltage, short-circuit and power pack protecting circuits

Data Logger and Electronic Control System:

- 7 inches' touch screen LCD panel
- 16 channels data logger for data acquiring
- Sample rate: 100 Hz
- Ability to software calibration of force and displacement
- Isotropic and anisotropic consolidation
- Easy Calibration with certification
- Ability to save data in Excel format
- Calculate resonance frequency
- Import real earthquake data to software to simulate earthquake

Software Feathers:

- Use LAN port to communicate with PC
- Pressure monitoring with the resolution of 1 Pa.
- Plot different test graphs and damping graph
- Indicate real time accelerate, velocity and displacement
- Plot instant graph of force-displacement and stress-strain cycles
- Save data in excel file
- shows specification and applied wave types

Shaking Table Testing Device(3D)

Code: HT 220

Azmoon's Shaking Table Testing Device made and design with one or multi axis base on your requirements. The device made and design base on international standards. Also dynamic actuator fatigue that used increase device trust ability. Ability to use real earthquake data to simulate earthquake. The frequency of dynamic jacks is about 40 Hz.

Shaking Table Testing Device software has the ability to control device base on force and displacement. Also the software could generate square, sine and triangle waves.

Device Features:

- 1 to 3 degree of freedom movement
- Equipped to Thread holes to fix samples
- Hydraulic unit to control table
- Powerful software with DSP technology and high frequency response
- Used the most accurate hardware to increase control accuracy.
- Equipped to cooling system for control temperature
- Using LAN to communicate with PC
- Ability to connect PID controller parameters

Environment Condition

- Humidity: 5 to 60 degree
- Temperature: 50 degrees of centigrade

Technical Specification

- Degree of freedom 1
- Wave Types saw tooth, square, triangle, sine
- Max. Loading Frequency 40 Hz
- Maximum Load 10 ton
- Table dimension 1800 x 1500 mm
- X direction range of motion ± 100 mm
- Y direction range of motion ± 50 mm
- Maximum acceleration 2.5g
- Maximum velocity 0.665 m/s
- Y direction applied force frequency 20 Hz
- X direction Tension and Compression Load Cell Capacity 50 kN
- Y direction Tension and Compression Load Cell Capacity 25 kN
- Force sensor resolution 10 N
- Acceleration sensor resolution 0.01g
- Velocity meter resolution 0.01 m/s
- Displacement sensor stroke 100 mm
- Displacement sensor resolution 0.01 mm

Bender Element

Code: HT 410

Bender elements allow to measure the maximum shear modulus (Gmax) of a soil sample and from this data to evaluate the stiffness of a soil. Gmax is generally associated with shear strain levels of about 0.001% and is a key parameter in small strain dynamic analysis, such as those to predict soil behavior or soil structure interaction during earthquakes, explosion or machine and traffic vibrations.
The system consists of a piezo ceramic transmitter, which is energized to produce the shear waves through the soil sample, and the receiver that receive the electrical signal. The travel time of the shear wave from the transmitter to the receiver is determined via a specific software that allows the user to quickly and easily calculate the shear wave velocity.

Technical Specification

- Amplifier with the gain of x10
- Maximum Sender and Receiver distance 50 cm.
- Submitted wave 50-2000 m/s
- Wave Types sine, square and saw tooth
- Wave amplitude and frequency 100V, 100 kHz
- Signal generator 1 quantity.
- Wave receiver 1 quantity.

Unsaturated Triaxial

Code: HT 420

Unsaturated Triaxial Testing System (UNSAT) is an extension to traditional Triaxial testing, in that soils from above the water table may be tested under conditions approaching the in-situ stress state and degree of saturation or partial saturation.

Asphalt

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Asphalt Centrifuge Extractor

ASTM D2172
ISIRI 1689
The Centrifuges are used for the determination of the bitumen percentage in bituminous mixtures. The cover is precisely machined and fitted with a solvent resistant gasket to avoid leakages. Capacity is 1500 g.

AS 100

Motorized Asphalt Centrifuge Extractor

ASTM D2172
ISIRI 1689
The Centrifuges are used for the determination of the bitumen percentage in bituminous mixtures. All models comprise a removable precision-machined rotor bowl housed in a cylindrical aluminum box. They are driven by an electric motor fit with AC drive (inverter) with the double function of speed control up to 3000 rpm. The centrifuge can be set for the automatic speed ramp up to 3000 rpm. or to any intermediate speed by the front knob. A digital display monitors the frequency, which is proportional to the speed.

AS 110

Model	AS 100	AS 110	AS 115
Description	Asphalt Centrifuge Extractor	Motorized Asphalt Centrifuge Extractor	Motorized Asphalt Centrifuge Extractor
Volume	1500g	1500g	3000g
Dim.(LxWxH)	370x350x450mm	450x320x550mm	550x420x650mm
Power Supply	Handy	250W, 220V, 50Hz,1ph	500W, 220V, 50Hz,1ph
Speed Control	-	3000rpm	3000rpm
Weight (Approx.)	23kg	30kg	45kg

Asphalt

Filter Paper

These filter papers present in 100 pcs/pack and used for AS 100 and AS 110 apparatuses.

Model	AS 130
Description	Filter Paper
QTY	100 per pack
Dim.	Dia. 250mm

Asphalt Flask

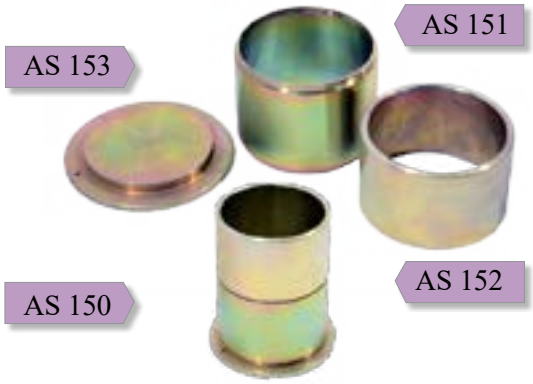
Asphalt Flask used for transport hot asphalt without temperature lost.

Model	AS 140
Int. Dim. DxH	230x30mm
Ext. Dim.DxH	310x40mm
Weight (Approx.)	23kg

Compacting Mold for Marshall

ASTM D1559, D5581, D6927
AASHTO T245
EN 12697-10
ISIRI 12381

The Marshall Compaction Molds are used to produce the Marshall specimens with automatic or manual compactors. All molds are made from galvanized steel, protected against corrosion. The diameter is of these molds are 4 in and 6 in.



Model	AS 150	AS 151	AS 152	AS 153	AS 155	AS 156	AS 157	AS 158
Description	Marshall Mold-Complete Set	Main Body	Filling Collar	Base Plate	Marshall Mold-Complete Set	Main Body	Filling Collar	Base Plate
Material	Galvanized Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel
Dim.	4in	4in	4in	4in	6in	6in	6in	6in
Weight (Approx.)	3kg	1.2kg	0.9kg	0.9kg	3kg	1.2kg	0.9kg	0.9kg

Hand Operated Marshall Compactor

ASTM D1559, D5581, D6927
AASHTO T245
EN 12697-10
ISIRI 12381

Marshall Compactors is used for preparation of bituminous specimens for Marshall Stability tests. The Compaction Assemblies consist of a Marshall Compaction Hammer and a Wooden Compaction Pedestal. The Pedestal supplied complete with steel plate, mold holder and hammer guide. The weight of the hammer is 4,536 gr or 10,205 gr and the height of test is 18 inches' base on ASTM D1559.

AS 160

Automatic Marshall Compactor

ASTM D1559, D5581, D6927
AASHTO T245
EN 12697-10
ISIRI 12381

The Automatic Marshall Compactor automatically compacts the sample and stops after the preset number of blows. The mold is held in position by a quick and practical clamping device.

AS 161

Model	AS 160	AS 161	AS 162	AS 163
Description	Hand Operated Marshall Compactor	Automatic Marshall Compactor	Hand Operated Marshall Compactor	Automatic Marshall Compactor
Standard Falling Weight	4536g- 10lbf	4536g- 10lbf	10,205kg- 22,5 lbs	10,205kg- 22,5 lbs
Drop Height	18in	18in	18in	18in
Dim.	350x300x1480mm	330x450x1680mm	370x320x1600mm	380x480x1750mm
Power Supply	-	250W, 220V, 50Hz, 1ph	-	250W, 220V, 50Hz, 1ph
Weight (Approx.)	40kg	90kg	60kg	110kg

Asphalt

Automatic Marshall Compression Machine

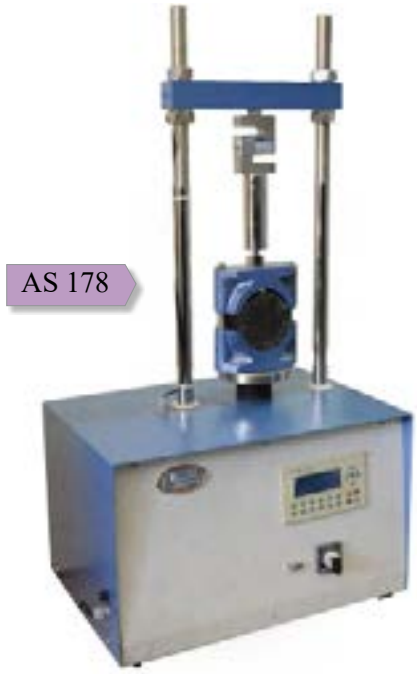
ASTM D1559, D5581, D6927
AASHTO T245
EN 12697-10
ISIRI 12381, 21075

Automatic Marshall Compression Machine used to determine the maximum load and flow values of bituminous mixtures.

This apparatus design and made by Azmoon based on required standard with highest precision and quality.

Technical Specification

- 4x16 in LCD with backlight indicator
- 50.8 mm/min uniform loading rate thanks to Gearmotor
- High stability thanks to made of Cast Iron
- Equipped to a 30 kN load cell with the resolution of 10 N
- 50 x 0.01 mm LVDT transducer
- Connect to PC via RS232 port
- PLC controlling system
- Save data results (failure force, deformation and etc.)
- Printer connection
- Automatic stop



- Plot force – displacement graph and tangential line
- Software calibration
- Limited switch

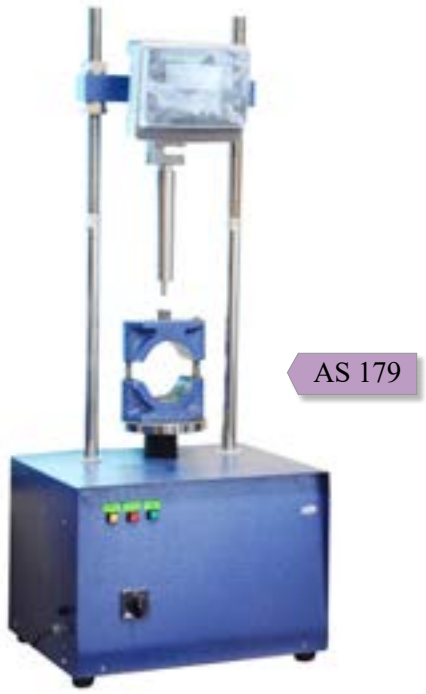
Digital Marshall Compression Machine

ASTM D1559, D5581, D6927
AASHTO T245
EN 12697-10
ISIRI 12381, 21075

Digital Marshall Compression Machine used to determine compression strength of asphalt specimen.

Technical Specification

- 50.8 mm/min uniform loading rate thanks to Gearmotor
- High stability thanks to made of Cast Iron
- Equipped to a 30 kN load cell with the resolution of 10 N
- 50 x 0.01 mm LVDT transducer
- Show maximum force on 1x6 in LCD indicator
- Limited switch
- Overload protection



Marshall Compression Machine with Proving Ring

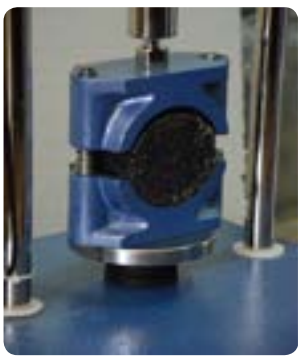
ASTM D1559, D5581, D6927
AASHTO T245
EN 12697-10
ISIRI 12381, 21075

Marshall Compression Machine with Proving Ring used to determine compression strength of asphalt specimen with the use of proving ring.

Technical Specification

- 50.8 mm/min uniform loading rate thanks to Gearmotor
- 50 kN proving ring
- 50 x 0.01 mm LVDT transducer
- Easy use and maintenance
- Limited switch

Model	AS180	AS 179	AS 178
Description	Marshall Compression Machine with Proving Ring	Digital Marshall Compression Machine	Automatic Marshall Compression Machine
Power Supply	550W, 220V, 50Hz,1ph	550W, 220V, 50Hz,1ph	750W, 220V, 50Hz,1ph
Indicator	Proving Ring	Digital LCD 1x16 backlight	Digital LCD 4x16 backlight - made in Taiwan
Capacity	30kN	30kN	30kN
Resolution	10N	10N	10N
Flow meter	Dial Indicator 10mm, Div. 0.01mm	Dial Indicator 10mm, Div. 0.01mm	Digital Transducer 50mm, Div. 0.01mm
Reporting Software	-	-	Includes Processing and Report Generation Software with Microsoft Excel
Dim.	450x500x1000mm	350x550x1000mm	350x550x1000mm
Stroke Switch	50mm	50mm	50mm
Weight (Approx.)	100kg	100kg	100kg



- 4in marshall stability mold.
- 6in marshall stability mold.
- 10mm stroke with the resolution of 0.01mm marshall flowmeter.

CBR/Marshall Apparatus

CBR/Marshall apparatus is a combination of two soil CBR and Marshall instruments. This device design and made to reduce time, space and costs of experiments. The device change from CBR apparatus to Marshall by changing jaws.

Motorized CBR-Marshall Compression Machine

ASTM D1883, D1559, D6927
BS 1377-4
AASHTO T193, T245
ISIRI 1159, 12381

Motorized CBR/Marshall machine equipped to a 30 kN proving ring and an analogue displacement indicator with the resolution of 0.002 mm and one penetration measurement gauge with the resolution of 0.01 mm. A Gearmotor used for loading in this apparatus.

The apparatus consists of:

- Gearmotor operating with uniform output loading
- 50.8 mm/min for Marshall and 1.27 mm/min for CBR test uniform loading rate thanks to Gearmotor
- 30 kN Proving ring equipped to a 0.002 mm resolution displacement indicator.
- 30 mm stroke with the resolution of 0.01 mm LVDT transducer
- Easy use and maintenance
- Limited switch

SO 634

Digital CBR/Marshall Test Machine

ASTM D1883, D1559, D6927
BS 1377-4
AASHTO T193, T245
ISIRI 1159, 12381

CBR/Marshall Machine with digital indicator equipped to a 30 kN load cell with the resolution of 10 N and a 30 mm stroke LVDT transducer with the resolution of 0.01 . Applied force to specimen shows on digital indicator. The device consists of 4 in stability mold for Marshall test and standard plunger for CBR test

Technical Specification

- 50.8 mm/min for Marshall and 1.27 mm/min for CBR test uniform loading rate thanks to Gearmotor
- 30 kN load cell with the resolution of 10 N
- 30 mm stroke with the resolution of 0.01 mm LVDT transducer
- Show maximum force on 2x16 in LCD indicator
- Limited switch

Model	SO 634	SO 635	SO 636
Description	Motorized CBR-Marshall Compression Machine	Digital CBR-Marshall Compression Machine	Automatic CBR-Marshall Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph	0.75kW, 220V, 50Hz,1ph
Indicator	Proving Ring	Digital LCD 2x16 backlight	Digital LCD 4x16 backlight made in Taiwan
Capacity	30kN	30kN	30kN
Resolution	33-37N	10N	10N
Flow meter	Dial Indicator 30mm, Div. 0.01mm	Dial Indicator 30mm, Div. 0.01mm	Digital displacement Transducer 50mm, Div. 0.01mm
Reporting Software	-	-	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	360x530x1400mm	360x530x1400mm	360x530x1400mm
Weight(Approx.)	90kg	90kg	90kg
Stroke Limit Switch	50mm	50mm	50mm

All CBR machines loading rate are 1.27 mm/min, based on customers required it's possible to manufacture 1 mm/min loading rate CBR base on BS-EN 1377- 4 standard. Applied load show on indicator.

Asphalt

Automatic CBR-Marshall Test Machine

ASTM D1883, D1559, D6927
BS 1377:4
AASHTO 193-99,T245
ISIRI 1159, 12381
After putting the specimen in device and press start button all steps of test done automatically
When test finished, the jaws go back to initial position, and force of failure (N) and penetration-flow (mm) shows on indicator.
Technical Specification

- 4x16 in LCD with backlight indicator
- Uniform loading output thanks to Gearmotor
- 30 kN load cell with the resolution of 10 N
- PC connection via RS 232
- Online maximum and instant force showing
- Software calibration
- Over load protection system
- PLC control system
- Limited switches
- Automatic stop after failure

SO 636

Tensile Splitting Device

ASTM D4123
EN 12697-23
Tensile splitting device Use to measure the splitting tensile strength and the radial strain of a Marshall specimen. Device equipped to one knife and two analogue displacement gauge with the resolution of 0.002 mm. Also the device made of corrosion resistance steel.

AS 184

Model	AS 184
Description	Tensile Splitting Device
Material	Chrome Plated Steel
Dim.LxWxH	170x155x200mm
Weight (Approx.)	5.5kg

Marshall Mold Extruder

Marshall Mold Extruder is designed to easily extrude specimens from Marshall, CBR and modify Proctor Molds. The capacity of the extruder is 30 kN.

Model	AS 200
Description	Marshall Mold Extruder
Capacity	30kN
Dim.DxH	310x500mm
Weight (Approx.)	23kg

AS 200

Water Bath

ASTM D5581,
AASHTO T245-97
ISIRI 12381
Water bath is used for many applications either for Asphalt or for Cement testing for curing in water cement specimens.
Inner side of water bath apparatus made of stainless steel. Capacity of device is 30 lit. and it is possible to adjust temperature of water.

Model	AS 220
Description	Water Bath
Capacity	30lit.
Temp. Range	20-100°C
Int. Dim.LxWxH	440x330x220mm
Ext. Dim.LxWxH	600x400x400mm
Weight (Approx.)	23kg

AS 220

Theroretical Maximum Specific Gravity

ASTM D2041
Used for determining the theoretical maximum specific gravity of uncompacted bituminous paving mixtures. They can also be used for the calculation of the percent of air voids in compacted bituminous mixtures and the amount of bitumen absorbed by the aggregates.

Model	AS 135
Description	Theroretical Maximum Specific Gravity

AS 135

Bitumen

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Thin-Film Oven

ASTM D6, D1754
AASHTO T179
BS 2000
Thin-Film Oven Test (TFOT) method is used for determining the loss in mass of bituminous compounds under the effect of heat and air on semisolid bituminous materials.
This oven equipped to a 5-6 rpm rotating plate, circulation fan, thermometer and thermostat. Temperature range of the device is 155-178 ºC. Azmoon's Thin-film ovens made of stainless steel and two layer tempered glass.

BI 100

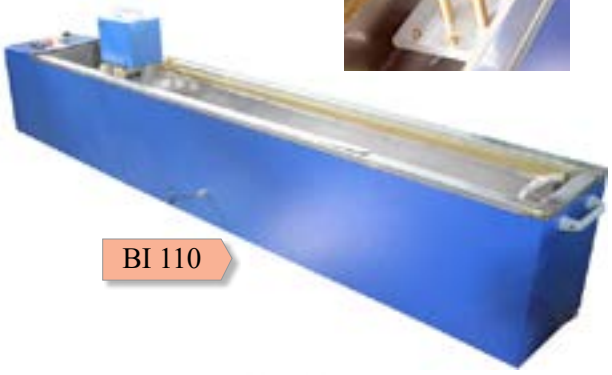
BI 102

Special Thin-film oven cups quantity: 4 pcs.

Model	BI 100
Description	Thin Film Oven
Power Supply	1000W, 220V, 50Hz,1ph
Temp. Range	155-178°C
Capacity	100lit
Speed Control	5-6rpm
Dim.LxWxH	610x550x829mm

Bitumen Ductility Testing Machine

ASTM D113
Ductility Testing Machine is used to determine the ductility of bituminous materials in a briquette mold by measuring the breaking elongation at a constant speed of 50 mm/min. The machine is designed to test 3 specimens simultaneously. Operator can control test condition by control heater temperature and circulation pump. The Internal tank is made of stainless steel.


BI 110

BI 111

Model	BI 110
Description	Bitumen Ductilometer
Power Supply	1000W, 220V, 50Hz,1ph
Max Stroke	1500mm
Speed Control	50mm/min
Dim.LxWxH	1800x300x440mm
Weight(Approx.)	60kg

Bitumen

Saybolt Viscometer

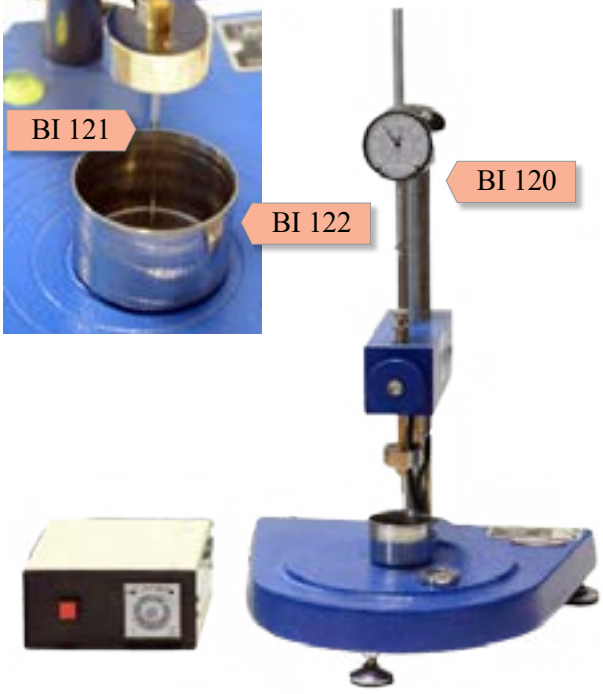
ASTM D88
BS 434:1
AASHTO T72
Saybolt Viscometer is used to determine empirical measurement of Saybolt Viscosity of petroleum products at specified temperatures.
Saybolt Viscometer made of stainless steel and consists of electrical heater, thermometer, digital thermostat, mixer and cooling coils.

Device Accessories:
Saybolt viscosity 60 ml flask, glass quantity: 2 pcs.

Model	BI 115
Description	Saybolt Viscometer
Power Supply	500W, 220V, 50Hz,1ph
Temp. Range	70-210°C
Dim.LxWxH	270x270x550mm
Weight(Approx.)	12kg

Bitumen Dial Penetrometer

ASTM D5
EN 1426
This device Used to determine the consistency of a bituminous sample under fixed conditions of load, time and temperature by using a 50 mm stroke displacement gauge with the resolution of 0.01 mm.
The body of bitumen dial penetrometer device made of aluminum and steel. This device is supplied with set of weights 50 gr and 100 gr.



Model	BI 120
Description	Automatic Bitumen Dial Penetrometer
Gauge	50mm
Div.	0.01mm
Dim.LxWxH	320x290x550mm
Weight(Approx.)	9kg

Cleveland Flash & Fire Point Tester

ASTM D92
AASHTO T48
EN 22592
ISIRI 12680
Used for determining the flash and fire point of petroleum products. It consists of a brass cup mounted on an electric heater with temperature controller.

Model	BI 125
Description	Cleveland Flash & Fire Point Tester
Power Supply	600W, 220V, 50Hz,1ph
Max. Temperature	400°C
Dim.LxWxH	420x700x280mm
Weight(Approx.)	6.3kg

Ring and Ball Apparatus for Softening Point of Bitumen

ASTM D36
AASHTO T53
EN 1427
ISIRI 3868
This device use to determine the softness of bitumen depends, amongst other factors, on the substance temperature, the more the temperature increases, the more increases the softness of the bitumen.
The unit consists of:

- a Pyrex beaker
- brass frame
- brass tapered rings
- two ball centering guides and two balls.
- Thermometer
- Bal centering

Model	BI 130
Description	Ring and Ball Apparatus for Softening Point of Bitumen
Ball Weight	3.5g
Dim.LxWxH	200x220x3750mm
Weight(Approx.)	3.7kg

Bitumen

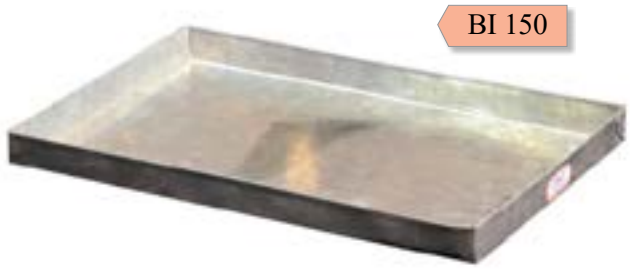
Hubbard – Carmick Specific Gravity Pycnometer

ASTM D70
AASHTO T43
ISIRI 3872
Hubbard – Carmick Specific Gravity Pycnometer for determining the density or relative density of bitumen.

Model	BI 141	BI 142
Description	Hubbard – Carmick Specific Gravity Pycnometer - Conical type	Hubbard – Carmick Specific Gravity Pycnometer - Cylindrical type
Capacity	25ml	24ml

Galvanized Bitumen Tray

Galvanized bitumen tray used for evaluate amount of bitumen per area (m2).



Model	BI 150
Description	Galvanized Bitumen Tray
Dim.LxWxH	440x280x30mm
Weight(Approx.)	1kg

Rock

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Uniaxial Compression Test

ASTM D2938, D4555, ISRM
ISIRI 17194

Uniaxial Compression Test apparatus used for uniaxial compressive strength tests of rock core specimens. With the help of hydraulic pressure system, a uniform axial load applied to specimen. The jacks that used in uniaxial compression test divide in two type, full automatic and semi-automatic jacks. Also the capacities of jacks are between 1000-4000 kN

In both type of jacks, user can control loading rate also in full automatic jacks loading rate can control by PLC automatically.

In both semi-automatic and full automatic types, it is possible to add an analogue displacement gauge or a LVDT to determine module of elasticity or Poisson's ratio.

Rock Triaxial Apparatus

ASTM D2664, ISRM

Rock Triaxial Apparatus used for Triaxial compressive strength test of cylindrical specimen. Azmoon's Triaxial jacks presented in two different models, both models have PC connection port, plot stress-strain, Mohr-Coulomb graphs and determine shear strength parameters.

RO 100 – 2000 kN fully automatic jacks, automatic pressure adjusts, 60 MPa hand pump, couplings, hose, 600 bar gauge and one Hoek cell with membrane.

RO 102 - 2000 kN semi-automatic jacks, 60 MPa hand pump, couplings, hose, 600 bar gauge and one Hoek cell with membrane.

Hydraulic Jack Specifications:

- Initial adjustment for uniform loading rate
- Specimen dimensions input and axial stress determination
- Connect to PC and save data in PDF and xls format.
- Overload software protection
- 60 HRC hardened pressing plates
- Software calibration

Rock

Model	RO102	RO 100
Description	Rock Triaxial Apparatus with Semi-Automatic Compression Machine	Rock Triaxial Apparatus with Fully Automatic Compression Machine
Power Supply	1.5kW, 220V, 50Hz	1.5kW, 220V, 50Hz
Capacity	2000kN	2000kN
Resolution	1kN	1kN
Distance Between Plates	320mm	320mm
Stroke limit	40mm	40mm
Selectable Measuring force	kgf, N, lb	kgf, N, lb
Digital Indicator	Digital LCD 4x16 backlight - made in Taiwan	7in Touchscreen LCD - TFT
Communication Port	Serial Communication Port- RS232	Serial Communication Port- RS232
Calibration	Possible with Internal Software	Possible with internal Software
Possibility to use with Length Transducer	✓	✓
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Weight(Approx.)	500kg	500kg

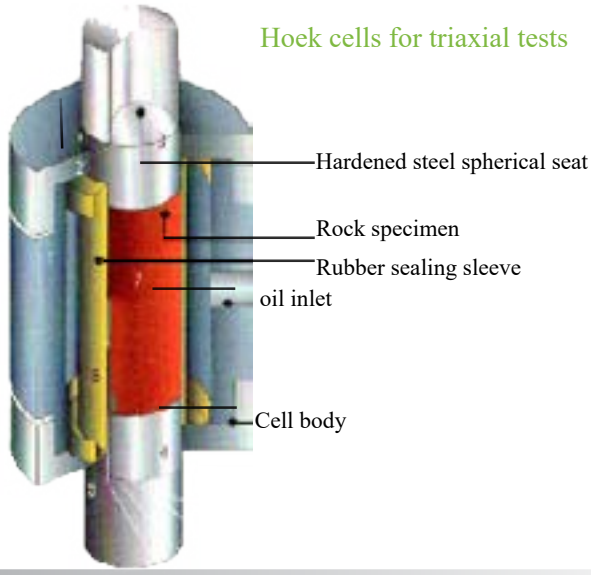
Hoek Cells have been designed to be used for Triaxial testing of rock specimens. Hoek Cells comprise a steel body complete with two 58 HRC hardened steel end caps which are screwed to the cell body, 2 pieces of upper and 2 pieces of lower loading caps with spherical coupling and a rubber sealing sleeve to separate the specimen from the cell fluid.

Azmoon Hoek cells and accessories with below specifications:

- RO 103 – 30.1 mm Hoek cell with hose and hand pump
- RO 104 – 38.1 mm Hoek cell with hose and hand pump
- RO 105 – 42.02 mm Hoek cell with hose and hand pump
- RO 106 – 45.74 mm Hoek cell with hose and hand pump
- RO 107 – 54 mm Hoek cell with hose and hand pump
- RO 108 – 61 mm Hoek cell with hose and hand pump
- RO 109 – 71.8 mm Hoek cell with hose and hand pump
- RO 110 – 30.1 mm membrane
- RO 111 – 38.1 mm membrane
- RO 112 – 42.02 mm membrane
- RO 113 – 45.74 mm membrane
- RO 114 – 54 mm membrane
- RO 115 – 61 mm membrane
- RO 116 – 71.8 mm membrane

Side pressure pump could order separately.

Hoek cells for triaxial tests



Point Load Test Apparatus

ASTM D5731, ISRM

Point Load Test Apparatus used for determine strength index of rocks. Adjustable jaws in range of 30 mm to 85 mm let users to test different size of specimen. The jaws made of 58 HRC hardened steel plates. A ruler assembled on the frame allows the direct measurement of the distance between the conical platens before and after the test.

Technical Specifications:

- 7 segment, red light digital indicator
- Connect to PC via serial port
- Software calibration
- Hold button to keep maximum force in memory

Model	RO 140	RO 150
Description	Point Load Test Apparatus	Point Load Test Apparatus
Indicator	Digital LCD 7 segment , red light	Digital LCD 7 segment , red light
Capacity	50kN	100kN
Resolution	20N	50N

Slake Durability Apparatus

ASTM D4644 , ISRM

This test method has been developed to assess the deterioration of rocks over a period of time when subjected to water immersion. Slake durability is a simulated weathering test to determine abrasion resistance during wetting and drying cycles of shale and similar soft rocks as used in embankments and other construction-related applications. Samples are alternately tumbled in mesh drums through a water medium and oven-dried for two cycles. The percent loss of mass is referred to as the slake durability index.

Slake Durability Apparatus consists of a motorized drive unit which is mounted on a baseplate and which can rotate two or four drums at a speed of 20 RPM.

Model	RO 130
Description	Slake Durability Apparatus
Power Supply	180W, 220V, 50OHZ

Rock

Rock Direct Shear Apparatus

ASTM D5607, ISRM

Rock Direct Shear Apparatus Used to determine the strength and slope stability of rock size max 115x125 mm or cores max. dia. 101 mm, both in the field and in the laboratory. The shear box consists of two halves, the upper being connected to two rams for reversible shearing action and the lower connected to a ram for normal load application.

by using hydraulic hand pump load applied to specimen. vertical load measured by a 50 kN gauge, also vertical displacement measured by a 25 mm stroke with the resolution of 0.01 mm dial gauge.

RO 125

Automatic Rock Direct Shear Apparatus

ASTM D5607, ISRM

The difference between this model and analogue Rock Direct Shear apparatus is that in automatic one all parts work adjusts automatically. The other feathers of automatic Rock Direct Shear apparatus are control load applying speed, processing data, plot stress-strain and shear stress-vertical stress graphs.

Technical Specifications:

- One 100 kN load cell with the resolution of 5 kN to measure shear load
- Ability to input initial test data like specimen dimension and pressure
- Apply vertical force base on preset settings
- Plot stress-displacement graph and measure shear strength parameters
- 10 inches' TFT touch screen indicator
- Two LVDT transducer to record vertical and horizontal displacement
- Two 100 kN load cell with the resolution of 5 kN

RO 127

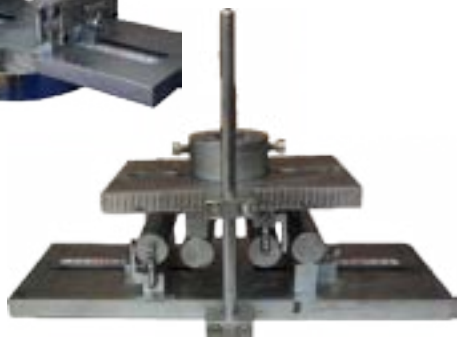
Model	RO 125	RO 127
Description	Rock Direct Shear Apparatus	Automatic Rock Direct Shear Apparatus
Dim.LxWxH	460x250x600mm	2000x1000x2200
Weight(Approx.)	45kg	650kg

Point Load Test Frame

ASTM D5731, ISRM
Point Load Test Frame use to determine uniaxial compressive strength of rock specimen with different diameters.

Flexural Modulus Test Frame

ISIRI 17015
ISRM
Flexural Modulus Test Frame use to determine flexural modulus of different core sizes of rocks.



Rock Splitting Tensile Test Frame

ASTM D3967, ISRM
Rock Splitting Tensile Test Frame use to evaluate splitting tensile strength of rocks in Brazilian Method.

*All upper frames presented without load cell and indicator

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Scoops

Model	GE 110-1	GE 110-2	GE 110-3	GE 110-4
Description	Stainless Steel Scoops	Stainless Steel Scoops	Stainless Steel Scoops	Stainless Steel Scoops
Size	Small	Large	Small	Large
Nose	Round	Round	Flat	Flat

Trowel

Model	GE 113
Description	Trowel

Graduated Pyrex Bottles

Model	GE 114
Description	Graduated Pyrex Bottles
Capacity	250, 500, 1000ml

Stainless Steel Tins with Cover

Model	GE 121	GE 122	GE 123
Description	Stainless Steel Tin with Cover	Stainless Steel Tin with Cover	Stainless Steel Tin with Cover
Size	55mm	85mm	90mm

General

Digital and Dial Gauges

Model	GE 124	GE 124-1	GE 125	GE 126	GE 128	GE 129	GE 133-1
Description	Dial Gauge	Dial Gauge	Dial Gauge	Dial Gauge	Dial Gauge	Dial Gauge	Dial Gauge
Range	0-10mm	0-20mm	0-30mm	0-50mm	0-5mm	0-12.7mm	0-80mm
Div.	0.01mm	0.01mm	0.01mm	0.01mm	0.002mm	0.002mm	0.01mm

Model	GE 127	GE 130	GE 131	GE 132	GE 133
Description	Digital Gauge	Digital Gauge	Digital Gauge	Digital Gauge	Digital Gauge
Range	0-10mm	0-10mm	0-30mm	0-50mm	0-100mm
Div.	0.001mm	0.01mm	0.01mm	0.01mm	0.01mm

Magnetic Gauge Holder

Model	GE 134
Description	Magnetic Gauge Holder

GE 134

Spatula

Model	GE 136	GE 136-1
Description	Wide Spatula	Tiny Spatula

GE 136

GE 136-1

Rubber Mallet

Model	GE 150
Description	Rubber Mallet

Rock Pick

Model	GE 160
Description	Rock Pick
Weight	1kg

Chisels

Model	GE 162	GE 163	GE 163-5	GE 164
Description	Density Chisel	Density Chisel	Density Chisel	Density Chisel
Length	20cm	30cm	40cm	50cm

Wire Scratch Brush

Model	GE 165
Description	Wire Scratch Brush

General

Rulers

Model	GE 180
Description	Wire Scratch Brush

GE 183

GE 182

GE 181

Steel Rulers

Model	GE 181	GE 182	GE 183
Description	Steel ruller	Steel ruller	Steel ruller
Length	30cm	50cm	100cm

Stop Watch

GE 184

Model	GE 184
Description	Stop Watch

Mercury

Model	GE 190
Description	Mercury
(.Weight (Approx	100g

GE 190

Glass Measuring Cylinders

Model	GE 220-1	GE 220-2	GE 220-3	GE 220-4	GE 220-5	GE 220-6	GE 220-7
Description	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder
Material	Glass	Glass	Glass	Glass	Glass	Glass	Glass
Capacity	2000cc	1000cc	500cc	250cc	100cc	50cc	25cc

Plastic Measuring Cylinders

Model	GE 227-1	GE 227-2	GE 227-3	GE 227-4	GE 227-5	GE 227-6
Description	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder	Measuring Cylinder
Material	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
Capacity	1000cc	500cc	250cc	100cc	50cc	25cc

Glass Beaker

Model	GE 231	GE 231-1	GE 231-2	GE 231-3	GE 231-4	GE 231-5	GE 231-6	GE 231-7	GE 231-8
Description	Measuring Beaker	Measuring Beaker	Measuring Beaker	Measuring Beaker	Measuring Beaker	Measuring Beaker	Measuring Beaker	Measuring Beaker	Measuring Beaker
Material	Glass	Glass	Glass	Glass	Glass	Glass	Glass	Glass	Glass
Capacity	2000cc	1000cc	800cc	600cc	500cc	400cc	250cc	100cc	50cc

Set of Plastic Beakers

Model	GE 235	GE 236
Description	Set of Plastic Beakers – 5per pack 100-1000cc	Set of Plastic Beakers – 6per pack 100-2000cc

General

Specific Gravity Bottles

Model	GE 240-1	GE 240-2	GE 240-3	GE 240-4
Description	Specific Gravity Bottle	Specific Gravity Bottle	Specific Gravity Bottle	Specific Gravity Bottle
Material	Glass	Glass	Glass	Glass
Capacity	1000cc	500cc	250cc	100cc

Erlenmeyers

Model	GE 254-1	GE 254-2	GE 254-3
Description	Erlenmeyer	Erlenmeyer	Erlenmeyer
Material	Glass	Glass	Glass
Capacity	1000cc	500cc	250cc

Burette

Model	GE 256	GE 256-1	GE 256-2
Description	Burette	Burette	Burette
Material	Glass	Glass	Glass
Capacity	100cc	500cc	250cc

Glass Pycnometer

Model	GE 301	GE 302	GE 303
Description	Pycnometer	Pycnometer	Pycnometer
Material	Glass	Glass	Glass
Capacity	25cc	50cc	100cc

Pipette

Model	GE 308-1	GE 308-2	GE 308-3	GE 308-4	GE 308-5	GE 308-6	GE 308-7
Description	Pipette	Pipette	Pipette	Pipette	Pipette	Pipette	Pipette
Material	Glass	Glass	Glass	Glass	Glass	Glass	Glass
Capacity	50cc	25cc	20cc	10cc	5cc	2cc	1cc

Bevel

Model	GE 239
Description	Bevel

Parafin

Model	GE 201
Description	Parafin
(.Weight (Approx	1000g

Dispensing Bottle

Model	GE 310	GE 311
Description	Dispensing Bottle	Dispensing Bottle
Material	Plastic	Plastic
Capacity	1000cc	500cc

Environment Thermometer

Model	GE 318
Description	Laboratory Environment Thermometer
Measuring Range	10-50°C

Glass Thermometer

Model	GE 320	GE 320-1	GE 320-2	GE 320-3	GE 320-4
Description	Glass Thermometer	Glass Thermometer	Glass Thermometer	Glass Thermometer	Glass Thermometer
Range	0-50°C	0-100°C	0-200°C	0-300°C	0-400°C

General

Thermometer

Model	321 GE	322 GE	323 GE	324 GE	325 GE
Description	Digital Thermometer	Digital Thermometer	Analogueue Thermometer	Analogueue Thermometer	Analogueue Thermometer
Temp. Range	C° 300+50-	C° 200+40-	C° 60+10-	C° 100+10-	C° 250+0
.Div	C° 1	C° 1	C° 1	C° 1	C° 2.5
Stem Length	105mm	70mm	125mm	150mm	195mm

Min-Max Analogueue Thermometer

Model	GE 331
Description	Min-Max Analogueue Thermometer
Measuring Range	-30 to 50°C

GE 331

Min-Max Digital Thermometer

Model	GE 332
Description	Min-Max Digital Thermometer
Measuring Range	Indoor: 0 to 50°C Outdoor: -50 to 70°C Humidity:15% to 95% RH
Resolution	Temperature: 0.1°C Humidity: 1%

GE 332

Vernier Caliper

Model	GE 351	GE 352	GE 353	GE 354
Description	Vernier Caliper	Vernier Caliper	Vernier Caliper	Vernier Caliper
Indicator	Analogueue	Analogueue	Digital	Digital
Range	0-200mm	0-300mm	0-200mm	0-300mm

Digital pH Meter

GE 376

Model	GE 376
Description	Benchtop pH Meter
PH range	0.00 to 14.00
resolution	0.01pH
accuracy	± 0.01pH
Conductivity range	0-19.99, 0-199.9, 0-1999 uS/cm
mV range	-1999 to +1999 mV
resolution	0.1mV
Accuracy	±0.2 mV
Temperature:	-5 to 80°C
Standard packing and accessories:	Operation manual, AC adaptor, pH / Cond. Electrode and electrode stand

GE 378

Vacuum Pump

Model	GE 378
Description	Vacum Pump

Water Distiller

GE 380

Model	GE 380
Description	Water Distiller
Material	Stainless Steel
Capacity	4lit per hour
Power Supply	1000W,220v,50Hz

Laboratory Dryer

Model	GE 411
Discription	Laboratory Dryer
Power Supply	1000W

GE 411

Construction Materials

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Gypsum Vicat Apparatus (Modified Type)

ASTM C472
ISIRI 5482
Gypsum Vicat apparatus use for determining of normal concentration of gypsum. Modified Vicat consists of a mobile rod that connected to an aluminum cone. Total weight of rod and cone is 35 g.
Below accessories could ordered separately:

- One 15 g weight for increase weight of rod and cone to 50 g.
- 60 mm diameter cone mold in lower part and 70 mm diameter in upper part, the height of the mold is 40 mm.
- 100x100 mm supporting glass plate

GY 110

Model	GY 110	GY 115	GY 116	CE 171	CE 174
Description	Gypsum Vicat Apparatus	Cone Penetrometer	Additional 15g Weight	Mold	Base Plate
Material	Steel Body	Aluminum	Steel	Bakelite	Glass
Dim.LxWxH	190x140x300mm	40x35mm	30x3mm	Dia. 70xdia. 60xH 40 mm	100x100mm
Weight(Approx.)	2110g	6g	15g	90g	150g

Temperature & Humidity Control Cabinet for Curing Gypsum Specimens

ASTM C472
ISIRI 5482
Azmoon's Temperature & humidity control cabinet use for curing of gypsum specimens in a specified temperature and humidity condition. This apparatus is useable for physical gypsum tests based on ISIRI 5482, ASTM C472 test.
Technical Specification

- Stainless steel inner box and rust resistance
- Insulated door to avoid temperature and humidity loss
- Circulation fan to reach uniform temperature and humidity
- Two separate indicators for time – temperature and humidity
- Temperature range: -10 ºC – +70 ºC
- Adjustable humidity control in range of 0-100%
- 1 – 900 min timer and ability to work continuously

GY 130

Construction Materials

Model	GY 130
Description	Temperature & Humidity Controlled Cabinet For Curing Gypsum Samples
Int. Dim.LxWxH	440x400x530mm
Ext. Dim.LxWxH	600x590x1160mm
Power Supply	220V, 50Hz, 1ph
Temperature Range	-10 to +70 ˚C
Humidity Range	0 to 100%
Internal capacity	120lit.
Shelves	2

Compression & Flexural Machine for Gypsum Specimens

ASTM C472
ISIRI 5482
Compression and Flexural Machine used for determine compressive and flexural strength of gypsum specimens.

Technical Specification:

- 30 kN load cell with the resolution of 10 N
- Adjustable loading rate in range of: 0.05-5 mm/min
- Uniform loading
- 4x16 in LCD with backlight indicator
- Maximum and instant force indicator
- Limited switches
- Software calibration
- PLC control system
- Overload protection
- LVDT sensor to measure displacement and plot stress-strength graph (should order separately)

Below molds suggest for this machine:

CE 330 – 50x50x50 mm Cast Iron cubic mold to build compressive samples
CE 360 – 40x40x160 mm cube Cast Iron mold to build flexural specimen

Model	GY 200
Description	Compression & Flexural Machine for Gypsum Specimens
Capacity	30kN
Accuracy	10N
Indicator	LCD 4×16in with back light
Power Supply	8.5N.m, 220V, 50Hz
Calibration	Possible with Internal Software
Dim.LxWxH	600x360x1200mm
Weight(Approx.)	90kg

Tile Abrasion Machine

ISIRI 755-1, 755-2

Abrasion Testing Machine is designed for determining the resistance to abrasion/wear of tiles based on ISIRI 755.

BR 220

Technical Specification:

- 200 mm in diameter steel made abrasive wheel with the height of 70 mm.
- Rotating speed of wheel: 75 rpm
- Digital indicator for showing rotating speed
- Cylindrical storage tank
- Plexiglas box
- 1 kg abrasion powder with the hardened degree of 80

Model	BR 220
Description	Tile Abrasion Machine
Power Supply	0.37kW, 220V, 550Hz
Dim.LxWxH	430x720x950mm
Weight	55kg

BR 222

- BR 222: abrasion powder with the hardened degree of 80 according to standard FEPA 42F.

Digital Flexural Machine

ISIRI 755-1, 755-2

Digital Flexural Machine use to determine flexural strength of bricks, mosaics and cement blocks. online Instant speed and maximum force show on digital indicator.

BR 110

Technical Specification:

- 30 kN load cell with the resolution of 10 N.
- Loading rate range: 0.3 – 9 mm/min
- Gear step motor
- 4x16 in LCD with backlight indicator
- Ability to connect LVDT sensor to measure displacement and plot force – displacement graph (need to order separately).
- Transfer data to computer and save in .xls format.
- Software calibration
- PLC control system
- Over load protection
- Limited switches

Model	BR 110
Description	Digital Flexural Machine
Capacity	30kN
Accuracy	10 N
indicator	LCD 4×16in with backlight
Power Supply	200W, 220V, 5Hz
Calibration	Possible with Internal Software
Dim.LxWxH	620x550x1200mm
Weight(Approx.)	120kg

Freezing and Thawing Apparatus of Mosaic

ISIRI 755-2

Freezing and Thawing Apparatus of Mosaic used for the determination of resistance of mosaics against freezing and thawing by providing freezing / thawing in air.

Technical Specification:

- Temperature range: -15ºC – +20ºC
- Time indicator
- Temperature indicator (1ºC indicator)
- Two circulation fan
- Thermostat resolution: 1ºC
- Indicator resolution: 0.1ºC

BR 200

Model	BR 200
Description	Freezing and Thawing Apparatus of Mosaic
Internal Dim.LxWxH	480x400x530mm
External Dim.LxWxH	610x550x830mm
Capacity	100lit
Fan	Yes
Power Supply	1600W, 220V, 50Hz,1ph
Temperature Range	50-250°C
Shelves	3

Graded Inclined Plane

ISIRI 7

This apparatus used to determine amount of convexity or concavity of bricks. The incline plate graded in 0.5mm. length of this apparatus is 50mm and the width is 10mm.

BR 135

Model	BR 135
Description	Graded Inclined Plane
Material	Nickel Plated Steel
Dim.LxWxH	50x10x10mm
Weight(Approx.)	77g

Digital Compression Machine

ISIRI 7

Digital Compression Machine used to determine the compressive strength of bricks. This machine manufactured of special steel with a rigid body. Azmoon's Compression Machines designed to perform reliable compression tests on bricks specimens especially suitable for on-site applications.

The Azmoon's Digital Compression Machines combines precision and simplicity with the unique design and ease of use manual. Also this machine consists of two 60HRC hardened jaws.

The machines design and made base on ASTM C39 standard. The jaws made of 60HRC hardened steel and the stroke vertical limit is 40mm.

BR 120

Technical Specification:

- Adjustable loading rate (kg/sec)
- 2x16 in LCD with backlight indicator
- 600bar Pressure transmitter
- Oil level indicator
- Ability to entry specimen dimension to evaluate compressive strength
- Overload protection
- 1 phase Motor with the power of 1 hp
- 40mm stroke limited switches
- 60HRC steel plate
- Data transfer to PC and save data in xls format
- Serial port RS232
- Software calibration

Construction Materials

Semi -Automatic Compression Machine

ISIRI 7

Semi-Automatic Compression Machine used to determine the compressive strength of bricks. This machine manufactured of special steel with a rigid body. Loading rate controlled by a hydraulic system and operator can adjust the rate. Azmoon's Compression Machines designed to perform reliable compression tests on bricks specimens especially suitable for on-site applications.

The Azmoon's Digital Compression Machines combines precision and simplicity with the unique design and ease of use manual. Also this machine consists of two 60 HRC hardened jaws.

The machines design and made base on ASTM C39 standard. The jaws made of 60HRC hardened steel and the stroke vertical limit is 40 mm.

BR 122

Technical Specification:

- Adjustable loading rate (kg/sec)
- 2x16 in LCD with backlight indicator
- 600 bar Pressure transmitter
- Oil level indicator
- Ability to entry specimen dimension to evaluate compressive strength
- Overload protection
- 1 phase Motor with the power of 1 hp
- 40 mm stroke limited switches
- 60 HRC steel plate
- Data transfer to PC and save data in xls format
- Serial port RS232
- Software calibration

Model	BR 120	BR 122
Description	Digital Indicator Compression Machine	Semi Automatic Compression Machine
Power Supply	0.75kW, 220V, 50Hz,1ph	1kW, 220V, 50Hz,1ph
Capacity	2000kN	2000kN
Resolution	1kN	1kN
Indicator	Digital LCD 2x16in backlight - Manufactured by Azmoon	Digital LCD 4x16in backlight - made in Taiwan
Communication Port	Serial Communication Port- RS232	Serial Communication Port- RS232
Calibration Method	Possible with Internal Software	Possible with Internal Software
Dim.LxWxH	700x430x1100mm	700x430x1100mm
Weight (Approx.)	450kg	500kg

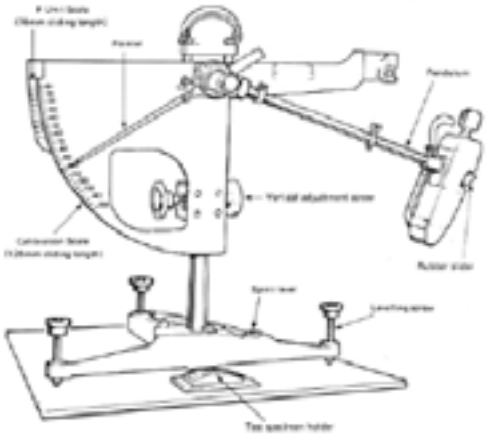
Skid Resistance & Friction Tester

ISIRI 755-1, 755-2, 12728

The Skid Resistance and Friction Tester is used for the measurement of surface friction properties. The apparatus is suitable for both site and laboratory applications and for Polished Stone Value tests using curved specimens from accelerated polishing tests. A Slider lifting system is integrated in the pendulum foot, which guarantees reliable adjustment operations.

Three screws used for leveling apparatus. Also low friction release mechanism of the pendulum arm used for better accuracy.

BR 210



Model	BR 210
Description	Skid Resistance & Friction Tester
Material	Aluminum & Steel Body
Dim.LxWxH	650x450x700mm
Weight (Approx.)	35kg

Construction Materials

Polystyrene Universl Testing Machine

ISIRI 11108, 7302, 7117

This machine used for Polystyrene Compressive Test based on ISIRI 7117 and bending test based on ISIRI 7302.

Technical Specification

- Ability to choose test type
- Compressive jaws for Polystyrene test (max. jaws size 30x30 cm)
- Bending jaws
- Adjustable loading rate in range of 1-30 mm/min
- Uniform loading rate
- 4x16 in LCD with backlight indicator
- PLC controlling system
- Record and plot force-displacement graph in Excel format.
- Evaluate and record bending strength

PS 110

Model	PS 110
Description	Polystyrene Universal Testing Machine
Capacity	10kN
Accuracy	5N
indicator	7in Touchscreen LCD - TFT
Power Supply	0.75kW, 220V, 50Hz
Calibration	Possible with Internal Software

Polystyrene Reaction to Fire Testing Chamber

ISIRI 7271-4

Polystyrene Reaction to Fire Testing Chamber used to evaluate reaction of polystyrene against of fire. Fire testing chamber manufactured and designed base on ISIRI 7271-4 standard. The dimension is 70x40x80 cm and made of stainless steel.

Roof Block Polystyrene Compression Bending Machine

ISIRI 11108
Roof Block Polystyrene Compression Bending Machine
This apparatus used for determine bending compression of Polystyrene roof block. The device manufacture base on ISIRI 11108 standard.

Technical Specification:

- Adjustable loading rate in range of 0.05-10 mm/min
- 4x16 in LCD with backlight
- Plot force – displacement graph in Excel
- Use step motor for apply load

Model	PS 120
Description	Roof Block Polystyrene Compression Bending Machine
Capacity	10kN
Accuracy	5N
indicator	7in Touchscreen LCD - TFT
Power Supply	0.75kW, 220V, 50Hz
Calibration	Possible with Internal Software

Polystyrene Compression & Bending Machine

ISIRI 7302, 7117
This apparatus uses for compression strength test of Polystyrene blocks based on ISIRI 7117 and bending strength test based on 7302.

Technical Specification:

- Ability to choose type of test
- Adjustable loading rate in range of 5-30 mm/min
- Uniform loading rate
- 4x16 inches LCD with backlight display
- PLC controlling system
- Plot force – displacement graph and recording σ_m, ε_m and σ_10 based on ISIRI 7117 standard.
- Plot force – bending graph

Model	PS 115
Description	Polystyrene Compression& Bending Machine
Capacity	10kN
Accuracy	5N
indicator	7in Touchscreen LCD - TFT
Power Supply	0.75kW, 220V, 50Hz
Calibration	Possible with Internal Software

Steel

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Universal Tensile, Compression, Bending Machine	161

Universal Tensile, Compression, Bending Machine

ASTM A370, E4
EN 10002-8

This machine design for tensile, compression and bending tests of metal and non-metal materials. Also by adding some accessories it›s possible to use this machine for steel cable, rods and chains. For easy insertion of tensile specimens. The jaws and grips can be easily removed by just pulling from the front. Hydraulic gripping system used for easy to work. Also Extremely rigid four column frame with large vertical clearance suitable for tension and compression tests.

Technical Specification:

- Quiet hydraulic system
- Upper and lower hydraulic jaws
- Max. distance between upper and lower jaws is 60 cm
- Size of jaws for grab rods

8-42 mm 1000 kN
8-32 mm 600 kN
8-24 mm 300 kN

- Ability to use for three different compressive, bending and tensile tests
- Adjustable loading rate in range of 5-50 mm/min
- Control loading rate automatically
- 10 in LCD touch screen
- Record Max. force and deformation
- Evaluate maximum stress, failure stress and break stress

Software Specification

- Calculate rod diameter and online presentation on Microsoft Excel
- Plot Stress – Strain graph
- Plot force – displacement graph and calculate bending strength

Steel

Model	ST 300	ST 600	ST 1000
Description	Universal Tensile, Compression, Bending Machine	Universal Tensile, Compression, Bending Machine	Universal Tensile, Compression, Bending Machine
Capacity	300kN	600kN	1000kN
Accuracy	100N	100N	100N
Power Supply	1500W, 220V, 50Hz,1ph	1500W, 220V, 50Hz,1ph	1500W, 220V, 50Hz,1ph
Distance Between Plates	550mm	550mm	600mm
Strok limit	160mm	160mm	160mm
Selectable Measuring force	kN	kN	kN
Speed Rate	5-50mm/min	5-50mm/min	5-50mm/min
Digital Indicator	10in Touchscreen LCD	10in Touchscreen LCD	10in Touchscreen LCD
Comunication Port	Serial Comunication Port RS232	Serial Comunication Port RS232	Serial Comunication Port RS232
Calibration	Possible with internal Software	Possible with internal Software	Possible with internal Software
Possibility to use with Length Transducer	✓	✓	✓
Reporting Software	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel	Includes Processing and Report Generation Software with Microsoft Excel
Dim.LxWxH	850x550x1800mm	900x600x1900mm	1100x750x2100mm
Weight(Approx.)	800 kg	1350 kg	1500 kg

Conditions of sale

General

- Any contract entered into by the company for the supply of good is subject to these conditions. Any writing on or attached to any purchase order form, document or correspondences shall not be included or implied unless previously agreed upon in writing and signed by an authorized officer of the company.
- No order for supply arising from a quotation or otherwise shall be deemed to be accepted in writing by the company until accepted in writing by the company or until delivery of the goods, whichever shall be the earlier.
- No responsibility is accepted by the company for any inaccuracy or error in orders given by telephone.

Guarantee

- Azmoon products are guaranteed against defective materials and workmanship for a period of 18 months from the date of shipment. We will repair or replace such items as may prove defective at our option. Under no condition will we allow labor charges or other expenses to repair defective merchandise without our approval.
- We accept no responsibility for damage or abuse to apparatus due to improper installation or operation.

Packing/shipping

- Unless otherwise expressly stated in writing the contract packing is not included in the contract price and will be the subject of an additional charge by the company. The company does not give warranty as to the fitness of any packing for storage purposes or any other purpose other than the transport of the goods to this named contract destination.
- In all cases containers, bottles, packages and packing materials are not returnable.

Cancellation

Cancellation of the order by the customer for whatever reason shall entitle the company to payment of all costs expenses and losses of the company arising therefrom. Such notification of cancellation by the purchaser shall not be deemed to have been accepted by the company in the absence of specific agreement by the company in writing to that affect. In all cases the company reserves to itself any rights that it may have in law.

Items may not be returned without prior written permission from Azmoon Co. no item is returnable after 30 days from shipping to customer. All returns are subject to a restocking charge of 15% of selling price (15% minimum). Any use and/or damage by customer or due to customer's improper repacking is subject to further charges as necessary to place items in a reasonable condition. Returns can be accepted. Claims: all claims for shortage, breakage or other discrepancies should be filed with the carrier immediately upon receipt of the shipment.

Notes

The company reserves the right to charge for the preparation off all drawings or sketches prepared either for the submission of quotations or any execution of orders. All such drawings remain the property of the company.

Catalog specifications and descriptions are as accurate as possible. We reserve the right to make changes and improvements in accordance with the latest specifications and design development.

Pressure, Stress	
1 Pa (N/m²)	0.01 mbar
	0.000145 lbf/in² (psi)
1 kpa (kN/m²)	0.01 kgf/cm²
	10 mbar
	20.885 lbf/ft²
	0.2953 in.Hg
	0.1450377 lbf/in² (psi)
1 kgf/cm²	98.0665 kPa
	14.223 lbf/in² (psi)
1 Mpa	10.197 Kgf/cm²
1 bar	100 kPa
	14.5038 lbf/in² (psi)
1 mbar	100 Pa
	2.0885 lbf/ft² (psi)
1 atm	101.325 kPa
	14.6959 lbf/in² (psi)
1 mm Hg (torr)	133.322 Pa
	0.01934 lbf/in² (psi)
1 mm H2O	9.80665 Pa
	0.001422 lbf/in² (psi)
1 lbf/in² (psi)	6.89476 kPa
	0.07031 kgf/cm²
	68.9476 mbar
1 lbf/ft²	47.8803 pa
	0.4788 mbar
1 ton/ft² (short)	0.976485 kgf/cm²
1 ton/ft² (long)	107.2517797 kPa
	1.0936638 kgf/cm²
1 in.Hg	3.38639 kPa
	0.491 lbf/in²
1 ft.H2O	2.98907 kPa
	0.030 kgf/cm²
	22.3997 mm Hg

Volume , Capacity	
1 m³	1.30795 yd³
1 dm³ (litre)	0.03531 ft³
	0.21997 imp.gal
	0.26417 U.S.gal
	1.7605 imp.pint
	2.11338 U.S.pint
1 ml (cc)	0.06102 in³
	0.0352 imp.fl.oz
	0.0338 U.S.fl.oz
1 (liter-Cubic dm)	61.023 in³
1 yd³	0.76455 m³
1 ft³	28.3168 dm³
1 in³	16.3871 cm³
1 imp.gal	4.54609 dm³
1 imp.pint	0.56826 dm³
1 imp.fl.oz	28.4131 cm³
1 U.S.gal	3.78541 dm³
1 U.S.fl.pt	0.47318 dm³
1 U.S.fl.oz	29.5735 cm³

Density	
1kg/m³	1.686 lb/yd³
	0.06243 lb/ft³
1 g/cm³	62.4280 lb/ft³
1 ton (long)/yd³	1328.94kg/m³
1 lb/yd³	0.593 kg/m³
1 lb/ft³	16.0185 kg/m³
1 lb/in³	27.6799 g/cm³
API	1.067 kg/cm³

Energy	
1 MJ	0.277778 kWh
1 J	0.737562 ft.lbf
1 kgf.m	9.80665 J
	7.23301 ft.lbf
1 therm	105.506 MJ
1 kWh	3.6 MJ
1 Btu	1.05506 KJ

Power	
1 h.p (imp)	745.700W (J/s)
1 h.p (metric)	735.499 W (J/s)
1 h.p (electric)	746.000 W (J/s)
1 ft.lbf/s	1.35582 W

Length	
1km	0.621371 mile
1m	1.09361 yd
	3.2808 ft
1cm	0.393701 in
1mm	0.03937 in
1µm	39.3701 µin
1mile	1.60934 km
1yd	0.9144 m
1 ft	0-3048 m
1 in	25.4 mm
1 milli -in(thou)	25.4 µm
1 µin	0.0254 µm
1in	25400 mic

Mass	
1 tonne (metric)	1000 kg
	2204.62 Ib
	0.98420 ton (UK)
1 kg	2.2046226 Ib
	0.01968 cwt (UK)
1 g	0.03527 oz (avdp)
1 ton (UK)	1016.05 kg
	2240 lb
	1.01605 tonne (metric)
1 cwt (UK)	50.8023 kg
	112 lb
1 lb	0.45359 kg
1 oz (avdp)	28.349 g
1 mg	2.2 lb

Area	
1 km²	100 ha
	247.105 acres
1 hectare (ha)	10000 m²
	2.47105 acres
1 m²	1.19599 yd²
1cm²	0.155 in²
1 mm²	0.00155 in²
1 mile²	2.58999 km²
1 acre	4046.86 m²
	0.404686 ha
1 yd²	0.836127 m²
1 ft²	0.092903 m²
1 in²	645.16 mm²