



CATALOG

Edisi tahun 2018



10100

10100 HAND BOR

The item listed provide the engineering with an economics range of equipment field survey work, using this equipment it is possible to obtain disturbed of undisturbed samples at reasonable depths subject the ground condition most item maybe inter connected.

Specification :

10100.1	Drilling Rod	Solid/Hollow bar 1 mtr length, 1¼ " dia	10 pcs
10100.2	Iwan Type Auger	Welded steel two radial baldes	1 pc
10100.3	Straight Chopping Auger	Steel pipe, hardened type	1 pc
10100.4	T – Piece	Welded Steel	1 pc
10100.5	Turning Rod	Machined Steel	1 pc
10100.6	Sampling Tube	68 mm dia, 40 cm length	10 pc
10100.7	Rod Head	Hardened, machined steel	1 pc
10100.8	Allen Key	Hardened steel	1 pc
50059/4	Pipe Wrench	24" length	1 pc
10100.10	Hammer	2 kg weight	1 pc
50055/1	Steel wire Brush	Wooden Handle	1 pc

CUSTOMER GUIDE See Set Number 1100

10100.A BORING MACHINE

The item listed provide the engineering equipment field survey work, using this equipment it is possible to obtain of undisturbed samples at reasonable depths subject the deep hole condition most item maybe inter connected.

SYSTEM :

- Double hydraulic pumps supply for each system of drilling rotary & lifting.
- Skid mounted with knock down assembly.
- Triple adjustment speed control.
- Adjustable angle drill.
- Available assembly for optional hydraulic winch for wireline coring.
- Additional equipment for MD 200 with lifting jack & wheels mounted for trans - moving.
- Compactable construction.
- Estimate 70 maters drill depth, W/NQ Rod. (70 m/m).

FUNCTION :

- Water circulation Open Hole Rotary Drill.
- Water circulation Wireline Diamond Core Drill.
- Auger Drill.
- Air circulation DTH, Hammer Drill / Blasting.

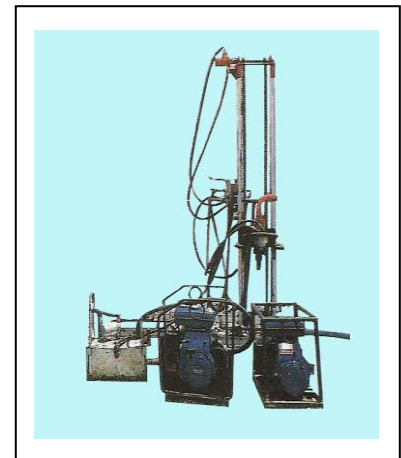
SPESIFICATION :

A. DRILLING RIG

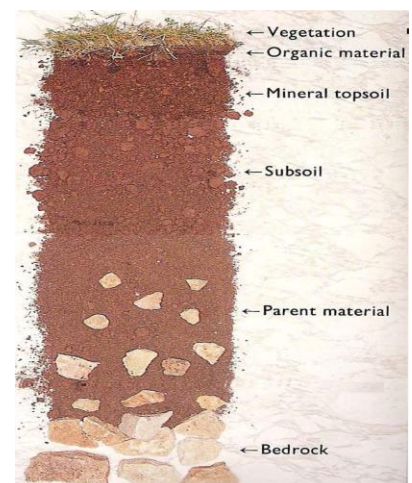
- Complete unit aluminium frame & base assembly.
- Reduction rotary box w/transmission 1 : 1.5.
- Adjustable Torque 105 khf.
- Swivel head for mud & air flushing.
- Oil capacity 40 liters of hydraulic hoses, quick – join coupling, filters & fitting.

B. HYDRAULIC POWER PACK

- Air cool power engine 18 HP – 3600 Rpm/gasoline.
- Twin pumps assembly @ 30 l/mn.
- Complete hydraulic hoses, fitting & adjustable stud belting.



10100.A





10110

10110 STANDARD PENETRATION TEST (SPT)

ASTM D.1586 & AASHTO T.206

For driving a split barrel sampler to obtain a representative soil sample and a measure of the resistance of the soil to penetration of the sampler and N SPT result is the number of blow during the last foot of penetration.

Specification :

10110.1	Split Barrel Sampler	Hardened machined steel 13/8" length	1 pcs
10110.2	Sampling Rod	Steel pipe, 1.5 m length	10 pcs
10110.3	Drive Weight	63.5 kg weight hammer	1 pc
10110.4	Anvil	Machine Steel	1 pc
10110.5	Guide Rod	76.2 cm drop height	1 pc
10110.6	Tripod Stand	Steel pipe 6 m height	1 set
10110.7	Pulley	20 cm dia	1 pc
10110.8	Rope	3/4" dia	15 mtr
10110.9	Adaptor	Machined Steel	1 pc
50059/4	Pipe Wrench	24" length	2 pcs
50055/1	Steel wire Brush	Wooden Handle	1 pc

CUSTOMER GUIDE See Set Number 1110

10120 DUTCH CONE PENETROMETER 2.5 ton Capacity

ASTM D.3441

The Dutch Cone Penetrometer soil investigation on site for determining Cone Resistance and Friction Resistance of soil layer for construction design.

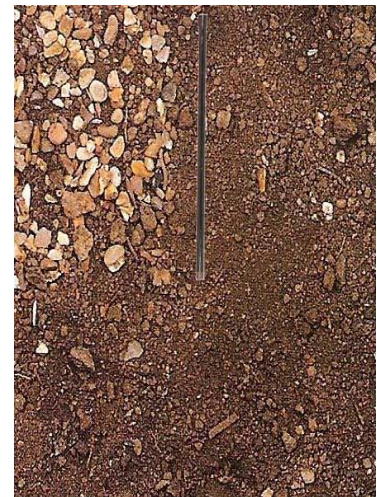
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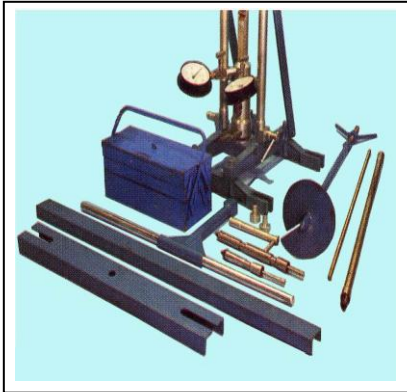
10120.1	Press in Apparatus Steel Construction, manually operated	2.5 tons capacity	1 set
10120.2	Sounding Rod	Machine Steel 1 - 1/4" dia 1 mtr effective length	20 pcs
10120.3	Plunger Rod	Round Bar 15 mm dia, 1 mtr length	20 pcs
10120.4	Push Adaptor	Machined Steel	1 pc
10120.5	Pull Adaptor	Machined Steel	1 pc
10120.6	Spiral Anchor	machined Steel 1.5 mtr length	4 pcs
10120.7	Handle & T - Piece	Machined Steel	1 set
10120.8	Mantle Cone	Precision Machined Steel hardened tip	1 pc
10120.9	Friction Cone	Precision Machined Steel hardened tip	1 pc
10120.10	Wrenches Set	Steel box case	1 set
10120.11	Long Fasten Press	1.5 mtr length, 8 cm width	2 pcs
10120.12	Short Fasten Press	1 mtr length, 12 cm width	2 pcs
50038/2	Manometer	60 kg/cm2 capacity	1 pc
50038/4	Manometer	250 kg/cm2 capacity	1 pc

CUSTOMER GUIDE See Set Number 1120



10120





10120.A

Soil formation and the soil profile

When a soil pit is dug from the surface down to bedrock a number of distinct layers will be visible. Each layer is called a horizon and usually has a fairly distinct boundary.

Thus a soil profile can be described and classified in term of the structure of the soil in each horizon.

The depth of a soil profile depends on many factors including land use, slope climate and bedrock. In tropical lowlands a soil profile may be many metres in depth. While on an exposed hilltop it may only be a few centimetres deep.

10120.A DUTCH CONE PENETROMETER 5 ton Capacity

ASTM D.3441

The Dutch Cone Penetrometer soil investigation on site for determining Cone Resistance and Friction Resistance of soil layer for construction design.

Specification :

10120.A1	Press in Apparatus	Steel Construction, manually operated 5 tons capacity	1 set
10120.A2	Sounding Rod	Machine Steel 1 - 1/4 " dia 1 mtr effective length	20 pcs
10120.A3	Plunger Rod	Round Bar 15 mm dia, 1 mtr length	20 pcs
10120.A4	Push Adaptor	Machined Steel	1 pc
10120.5A	Pull Adaptor	Machined Steel	1 pc
10120.A6	Spiral Anchor	machined Steel 1.5 mtr length	4 pcs
10120.A7	Handle & T - Piece	Machined Steel	1 set
10120.A8	Mantle Cone	Precision Machined Steel hardened tip	1 pc
10120.A9	Friction Cone	Precision Machined Steel hardened tip	1 pc
10120.A10	Wrenches Set	Steel box case	1 set
10120.A11	Long Fasten Press	1.5 mtr length, 8 cm width	2 pcs
10120.A12	Short Fasten Press	1 mtr length, 12 cm width	2 pcs
50038/2	Manometer	60 kg/cm2 capacity	1 pc
50038/5	Manometer	500 kg/cm2 capacity	1 pc

CUSTOMER GUIDE See Set Number 1120.A

10120.E DUTCH CONE PENETROMETER HYDRAULIC SYSTEM

ASTM D.3441

The penetrometer 50 kN is a compact instrument, that consist of a driving appliance and a separate moveable power unit. The basic accessories incorporate anchoring equipment and all components for the mechanic CPT including a hydraulic measuring device with pressure gauges.

Specification :

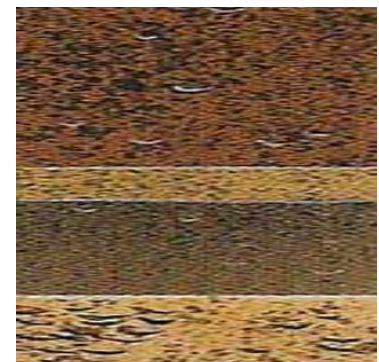
Max. driving capacity	: 50 kN
Max. pulling capacity	: 37.5 kN
Stroke of cylinder	: 700 mm
Sounding speed	: 2 cm/sec
Unloaded speeds :	
Upwards	: 12.5 cm/sec
Downwards	: 10 cm/sec

Consist of :

Hydraulic driving appliance	1 unit
Engine/pump 5.3 kw petrol engine	1 unit
Flexible hoses	1 set
Control Unit	1 set
Anchoring Beams	2 pcs
Screw Pickets	4 pcs
Sounding tubes 36/16 mm dia x 500 mm, including pressure rod	20 pcs



10120.E





10130



10130.E

10130 LIQUID LIMIT TEST

ASTM D.4318 & AASHTO T.89

Soil index properties are used extensively by engineers to discriminate between the different kind of soil within a broad category clay will exhibit a wide of engineering properties depending upon its composition, classification on test to determine index properties.

Specification :

10130.1	Liquid Limit Device	Hand operated, brass cup, rubber base	1 set	
10130.2	ASTM Grooving tool	Machine steel, head gauge		1 pc
10130.3	Cassagrande Grooving Tool			
10130.4	Glass Plate	Brass plate		1 pc
50017/1	Tin Box	Glass, 10 mm thick, 30 x 30 cm		1 pc
50018/3	Thin Box	Aluminium 60 gr capacity		12 pcs
50018/3	Graduated Cylinder	100 ml capacity		1 pc
50029/2	Evaporating Dish	12 cm dia. 250 ml capacity		1 pc
50048/1	Spatulla	150 mm blade		1 pc

CUSTOMER GUIDE See Set Number 1130

10130.E Liquid Limit Device Electric type

10140 PLASTIC LIMIT TEST

ASTM D.4318 & AASHTO T.90

The plastic limit is defined as the lowest moisture content of soil that will permit a sample to be rolled into threads 3 mm diameter without the thread breaking.

Specification :

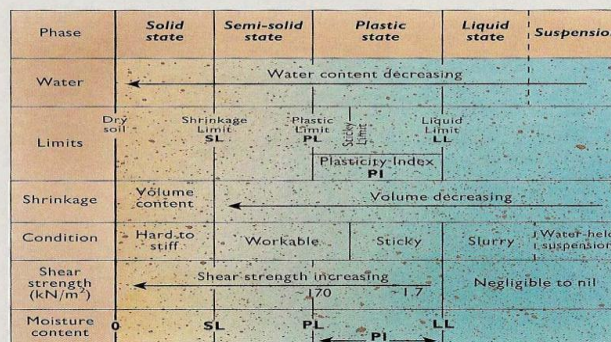
10140.1	Glass Plate	Glass, 10 mm thick, 30 x 30 cm	1 pc
10140.2	Reference Rod	Wire steel rod 3.2 mm dia	1 pc
50017/1	Thin Box	Aluminium 60 gr capacity	12 pcs
50018/3	Graduated Cylinder	100 ml capacity	1 pc
50029/2	Evaporating Dish	12 cm dia, 250 ml capacity	1 pcs
50048/1	Spatulla	150 mm blade	1 pc
50048/1	Scraper	100 mm blade	1 pc

CUSTOMER GUIDE See Set Number 1140



10140

Phases of Soil and the Atterberg Limits





10150

10150 SHRINKAGE LIMIT TEST

ASTM D.427 & AASHTO T.92

When the water content of a fine grained soil reduced below the plastic limit, shrinkage of the soil mass continue until the shrinkage limit is reached shrinkage can be significant in clays but less so in silts and sands.

Specification :

10150.1	Prong Plate	3 mm hard plastic, 3 needles	1 pc
10150.2	Monel Shrinkage Dish	Flat bottom 40 mm dia, 12 mm high approx	1 pc
10150.3	Crystallizing Dish	Glass made 5 cm dia, 9 dia overflow	1 set
10150.4	Mercury	1 kg weight	1 kg
10150.4	Glass Plate	Glass 10 mm thick	1 kg
50018/3	Graduated Cylinder	100 ml capacity	1 pc
50029/2	Evaporating Dish	12 cm dia. 250 ml capacity	1 pc
50047/1	Spatulla	150 mm blade	1 pc
50049/1	Scraper	100 mm blade	1 pc
50017/1	Thin Box	Aluminium 60 gr capacity	12 pc

CUSTOMER GUIDE See Set Number 1150

10160 HYDROMETER ANALYSIS TEST

ASTM D.422 & AASHTO T.88

The analysis of soils by particle size provides a useful engineering classification system from which a considerable amount of empirical data can be obtained for soil containing a range of coarse and fine particles it is usual to employ a composite test of sieving and sedimentation procedures.

Specification :

10160.1	Hydrometer A (152 H)	Glass stream line, range 0 – 60 gr soil/ltr	1 pc
10160.2	Hydrometer B (151 H)	Glass stream line, range 0.995 – 1.038	1 pc
10160.3	Mechanical Stirrer	Electric 220 volt, cast aluminium frame 10.000 rpm	1 set
10160.4	Dispersion Cup	Stainless steel, brass baffles	1 pc
10160.5	Jar Bath	Glass/Plastic hard 60 x 30 x 40 cm	1 pc
10160.6	Water Heater	Temperature control, electric ambient to 60°C	1 pc
10160.7	Dispersing Agent	Sodium hexa/sodium silicate	1 kg
10160.8	Hydrometer Jar	Glass 1000 ml capacity	2 pcs
50018/6	Graduated Cylinder	1000 ml capacity	1 pc

CUSTOMER GUIDE See Set Number 1160



10160

10170 MOISTURE CONTENT TEST

The moisture content of soil the percentage of water present is a means of classifying the soil type, standard method for determining the moisture content of soil is the oven drying method and this is the procedure recommended for a soils laboratory.

Specification :

10170.1	Balance	311 gr capacity. 0.01 gr sensitivity	1 set
10170.2	Oven	electric 220-AC, 53 ltr capacity, Single door	1 set
50017/1	Thin Box	Aluminium, 60 gr capacity	12 pcs
50025/2	Dessicator	Glass, 24 cm dia approximately	1 set

CUSTOMER GUIDE See Set Number 1170



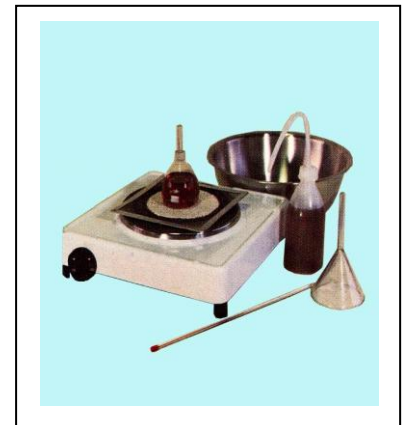
10170

10180 SPECIFIC GRAVITY TEST (Heating Method)
ASTM D.854 & AASHTO T.100

Particle density or specific gravity is a measure of the actual particles which make up the water they displace a knowledge of the particle density is essential in relation to other soil tests.

Specification :

50010/1	Hot Plate	Electric 220 volt, 1500 watt	1 pc
50057/2	Asbestos Wire Gauze	15 cm x 15 cm	1 pc
50016/4	Mixing Bowl	Stainless steel 250 mm dia	1 pc
50024/2	Density Bottle	100 ml capacity	3 pcs
50027/1	Funnel	Glass	1 pc
50031/2	Wash Bottle	250 ml capacity	1 pc
50034/2	Thermometer	Range 0 – 100°C	1 pc



10180

CUSTOMER GUIDE See Set Number 1180



10180.A

10180.A SPECIFIC GRAVITY (Vacuum Method)
ASTM D.854 & AASHTO T.100

Particle density or specific gravity is a measure of the actual particles which make up the water they displace a knowledge of the particle density is essential in relation to other soil tests.

Specification :

50056/2	Mixing Bowl	Stainless steel, 250 mm dia.	1 pc
50022/2	Picnometer Flask	500 ml capacity	1 pcs
50027/1	Funnel	Glass, wide mounth	1 pc
50031/2	Wash Bottle	250 ml capacity	1 pc
50032/1	Pipette	Glass, 5 ml capacity	1 pc
50034/2	Thermometer	Range 0 – 50°C	1 pc
50043/1	Vacuum Pump	Rotary pump 0 – 76 cmHg	1 pc

CUSTOMER GUIDE See Set Number 1180.A

10190 COMBINATION PERMEAMETER TEST
ASTM D.2434 & AASHTO T.215

This equipment is used for testing the permeability of granular soils, the specimen is formed in a permeability cell and water is passed through it from a constant level tank. Clays and silts are tested using the falling head technique. a specimen is confined within a cylinder and connected to a glass tube of fixed diameter filed with deaired water.

Specification :

10190.1	Sample Chamber	transparent fibre glass 2 – ½ " i.d 14" height porous stone, cast aluminium base	1 set
10190.2	Frame	Aluminium frame	1 set
10190.3	Funnel	Plastic, wide mounth, with over flow	1 set
10190.4	Porous Stone	2 – ½ " diameter	2 pcs



10190

CUSTOMER GUIDE See Set Number 1190

10200 COMPACTION TEST
ASTM D.698/D.1557 & AASHTO T-99/T.180

Compaction test basic data for soil :

The relationship between dry density and moisture content for a given degree of compactive effort.

The moisture content for the most efficient compaction, that is at which the maximum dry density is achieved under that compactive effort. The value of the maximum dry density so achieved.

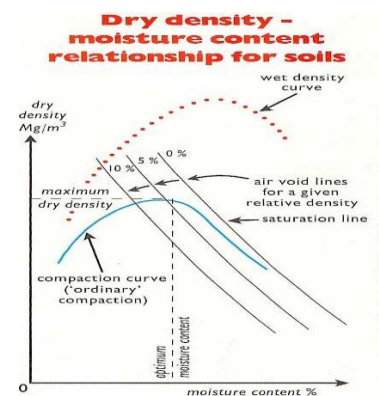
Specification :

10200.1	Standard Proctor Mold	Machine steel, plated 4" i.d. 4.584" height, 2 height of collar	1 pc
10200.2	Modified Proctor Mold	Machine steel, plated 6" i.d. 4.584" height, 2 height of collar	1 pc
10200.3	Standard Proctor Hammer	Machine steel, plated 12" drop height, 5.5 lbs weight	1 pc
10200.4	Modified Proctor Hammer	Machine steel, plated 18" drop height 10 lbs weight	1 pc
10200.5	Extruder	Steel frame, hydraulic jack	1 set
10200.6	Square Pan	Galvanized steel 65 x 65 x 7.5 cm	1 pc
50017/1	Tin Box	Alumunium, 60 gr capacity	12 pcs
50018/6	Graduated Cylinder	Glass 1000 ml capacity	1 pc
50047/2	Scoop	Cast Aluminium	1 pc
50051/1	Trowel	Pointed type	1 pc
50053/7	Straight Edge	30 cm length	1 pc
50054/1	Rubber Mallet	Wooden Handle	1 pc
50055/1	Steel Wire Brush	Wooden Handle	1 pc

CUSTOMER GUIDE See Set Number 1200



10200



10210


10210 LABORATORY CBR TEST
ASTM D.1883 & AASHTO T.193

The California Bearing Ratio or CBR test as it is usually termed is an empirical test which was first developed in California USA, for estimating the bearing value of highway sub base and sub grade, hence its name. the test follows a standarised procedure and there is little different between BS and ASTM test.

Specification :

10210.1	Mechanical Loading Pressure	Steel frame, hand operated, two speeds 10.000 lbs cap, supplied with dial	1 set
10210.2	CBR Mold	Machined steel 6" i.d 7"height 2" height of collar	3 pcs
10210.3	Spacer Dish	Machined steel 5 - 15/16" dia, 2.416"height	1 pc
10210.4	Cutting Edge	Machine steel , Sharp edge	1 pc
10220.5	Circular Surcharge Weight	Machine steel , 5 - 7/8" dia, 5 lbs weight	3 pcs
10210.6	Slotted Surcharge Weight	Machine steel , 5 - 7/8" dia, 5 lbs weight	3 pcs
10210.7	Modified proctor hammer	Machine steel , 18" drop height 10 lbs weight	1 pc
50001/6	Proving Ring	6000 lbs capacity	1 set
50014.4	Square Pan	Galvanized steel 65 x 65 x 7.5 cm	1 pc
50017/1	Tin Box	Alumunium, 60 gr capacity	12 pcs
50018/6	Graduated Cylinder	1000 ml capacity	1 pc
50047/2	Scoop	Cast Aluminium	1 pc
50051/1	Trowel	Pointed type	1 pc
50053/1	Straight Edge	300 mm length	1 pc

CUSTOMER GUIDE See Set Number 1210

10220 UNCONFINED COMPRESSION MECHINE TEST
ASTM D.2166 & AASHTO T.208

The unconfined compressive strength of cohesive soils can be determined by testing cylindrical specimen.

Specification :

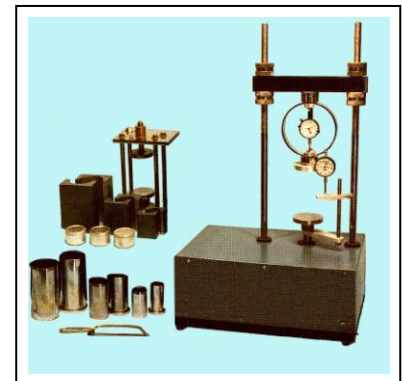
10220.1	Unconfined Compression Machine	Cast aluminium, gear box adjustable height of top plate, hand operated	1 set
10220.2	Sample Tubes	35.0 mm dia x 70 mm height 47.5 mm dia x 95 mm height 70.0 mm dia x 140 mm height	1 pc 1 pc 1 pc
10220.3	Split sample Tubes	35.0 mm dia x 70 mm height 47.5 mm dia x 95 mm height 70.0 mm dia x 140 mm height	1 pc 1 pc 1 pc
10220.4	Extruder	35.0 mm dia x 70 mm height 47.5 mm dia x 95 mm height 70.0 mm dia x 140 mm height	1 pc 1 pc 1 pc
10220.5	Trimmer	Steel frame, 3 tubes size	1 set
50001/1	Proving Ring	100 kg capacity	1 set
50002/6	Dial Indicator	Range 30 mm x 0.01 mm	1 pc
50017/1	Thin Box	Aluminium 60 gr capacity	12 pc
50058/1	Wire Saw	10 cm length	1 pc

CUSTOMER GUIDE See Set Number 1220

10220.E Unconfined Compression Machine Electric type



10220



10220.E



10230

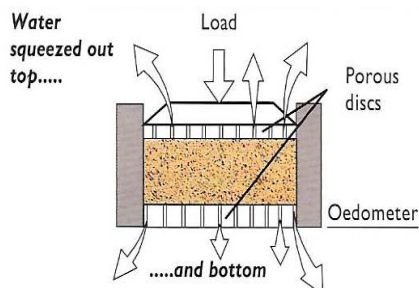
10230 CONSOLIDATION TEST
ASTM D.2435 & AASHTO T.216

The one dimensional consolidation test is used for the determination characteristics of soils of low permeability. Test are carried out on specimens prepared from undisturbed samples. Data obtained from these tests together with classification data and a knowledge of the soils loading history, enables estimate to be made of the behaviour of foundation under load.

Specification :

10230.1	Consolidation frame	welded steel, 2 test unit, 1:10 lever ratio	3 set
10230.2	Consolidometer	Brass, 65 mm sample dia, porous stone	3 set
10230.3	Loads	Slotted, machined steel 830 gr Slotted, machined steel 1660 gr Slotted, machined steel 3320 gr Slotted, machined steel 6640 gr Slotted, machined steel 13280 gr	6 pcs 3 pcs 3 pcs 3 pcs 3 pcs
10230.4	Sample Tube	Machined steel, 65 mm dia plated, With extruder	3 set
50002/4	Dial Indicator	Range 10 mm x 0.01 mm	3 pcs
50058/1	Wire Saw	10 cm length	3 pcs

CUSTOMER GUIDE See Set Number 1230



10240 DIRECT SHEAR TEST
ASTM D.3080 & AASHTO T.236

Every building or structure which is founded in or on the earth imposes loads on the soil that supports the foundations. The stresses set up in the soil cause deformations of the soil. One stress failure is caused by slippage of soil particles one on another, which may lead to the sliding of one body of soil relative to the surrounding mass.

Specification :

10240.1	Loading Machine	welded steel frame, hand operated	1	set
10240.2	Shear Box	Brass, 63.5 mm sample dia, porous stone	1	set
10240.3	Loads	Slotted, machined steel 3167 gr weight	2	pcs
		Slotted, machined steel 6334 gr weight	1	pc
10240.4	Sample Tube	Machined steel, 63 mm dia extruder	1	pc
50001/1	Proving Ring	100 kg capacity	1	set
50002/4	Dial Indicator	Range 10 mm x 0.01 mm	1	pc
50002/6	Dial Indicator	Range 30 mm x 0.01 mm	1	pc
50058/1	Wire Saw	100 mm blade approx	1	pc

CUSTOMER GUIDE See Set Number 1240

10240.E Electric Direct Shear

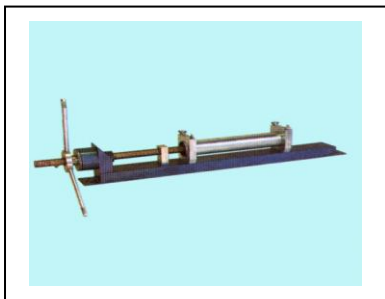
- Direct entry via touch
- Rapid approach and return to start datum
- Variable speed



10240



10240.E



10250

10250 SAMPLE EXTRUDER

For extruding specimens from sampling tube.

Specification :

10250.1	Frame	Welded steel	1	set
10250.2	Sample tube	Screw type	1	pc

10250.E ELECTRIC SAMPLE EXTRUDER

For extruding specimens from sampling tube.

Specification :

10250.E.1	Frame	Welded steel	1	set
10250.E.2	Sample tube	Screw type	1	pc



10250.E

10260 TRIAXIAL UU TEST

The measurement of unconsolidated Undrained total stress or effective stress requires the use of different procedures.

Specification :

Triaxial electromotor 1000 kg capacity	1 unit
Proving ring 200 kg capacity	1 set
Dial deformation 20 mm	1 pc
Triaxial cell for sample 38 mm & 50 mm	1 set
Pore water pressure	1 set
Water tank	2 set
Air compressor ¼ HP	1 set
Sample preparation	1 set

10260.A TRIAXIAL UU – CU TEST

The measurement of Unconsolidated Undrained and Consolidation Undrained total stress or effective stress requires the use of different procedures.

Specification :

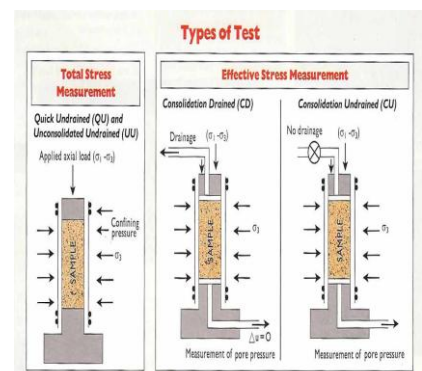
Triaxial electromotor 1000 kg capacity	1 unit
Proving ring 200 kg capacity	1 set
Dial deformation 20 mm	1 pc
Triaxial cell for sample 38 mm & 50 mm	1 set
Volume change	2 set
Pore water pressure	1 set
Water tank	2 set
Air compressor ¼ HP	1 set
Sample preparation	1 set

10260.B TRIAXIAL UU – CU – CD TEST

The measurement of Unconsolidated Undrained, Consolidation Undrained and Consolidated Drained total stress or effective stress requires the use of different procedures.

Specification :

Triaxial electromotor 1000 kg capacity	1 unit
Proving ring 200 kg capacity	1 set
Dial deformation 20 mm	1 pc
Triaxial cell for sample 38 mm & 50 mm	1 set
Volume change	1 set
Pore water pressure	1 set
Null Indicator	1 pc
Water Distribution Panel	1 set
Water tank	2 set
Air compressor ½ HP	1 set
Sample preparation	1 set





10270

in – situ properties such as density, moisture content and bearing capacity

10270 PLATE BEARING TEST

ASTM D.1194 & AASHTO T.235

Application includes determining the bearing capacity of the soil in situ, designing for statistic loads on spread footing and repetitive and non repetitive plate loading test of soils and flexible pavements.

Specification :

10270.1	Manometer	6" dia 30 tons capacity, 0.5 tons increment	1 pc
10270.2	Height Adjustment	Machined steel	1 pc
10270.3	Hydraulic Cylinder	30 tons capacity	1 pc
10270.4	Hydraulic Hand Pump	10.000 psi capacity	1 pc
10270.5	Hydraulic Hose	10.000 psi, 180 cm length	1 pc
10270.6	Reference Beam	steel pipe, 150 cm span	1 set
10270.7	Square Bearing Plate	12" x 12" machined steel, 1" thick	1 pc
10270.8	Circular Bearing Plate	6" dia machined steel, 1" thick	1 pc
10270.9	Circular Bearing Plate	10" dia machined steel, 1" thick	1 pc
10270.10	Circular Bearing Plate	12" dia machined steel, 1" thick	1 pc
10270.11	Circular Bearing Plate	18" dia machined steel, 1" thick	1 pc
10270.12	Circular Bearing Plate	24" dia machined steel, 1" thick	1 pc
10270.13	Circular Bearing Plate	30" dia machined steel, 1" thick	1 pc
50002/6	Dial Indicator	Range 30 x 0.01 mm	4 pc
50003/1	Dial Holder / Dial Stand	Magnetic / Screw Ring	4 pc

CUSTOMER GUIDE See Set Number 1270

10280 FIELD CBR TEST

ASTM D.4429

The use of in situ CBR apparatus on road construction contracts enable the bearing capacity soils to be determined quickly and efficiently with minimum delay contracting plant.

Specification :

10280.1	Mechanical Jack	Cast aluminium housing 5 tons cap. Hand operated 2 speeds	1 set
10280.2	Swivel head	Cast aluminium	1 pc
10280.3	Field Penetration Piston	Machined steel plated 3 sq in cross section area	1 pc
10280.4	Extention Set	Machined steel plated 5 cm, 10cm 20 cm, 30 cm and 60 cm with connecting adaptor	1 set
10280.5	Reference Beam	Steel pipe 150 cm span	1 set
10280.6	Circular Surcharge Weight	Machined steel plated 10" dia, 10 lbs weight	1 pc
10280.7	Slotted Surcharge Weight	Machined steel plated 8" dia, 10 lbs weight	1 pc
10280.8	Slotted Surcharge Weight	Machined steel plated 8.5" dia, 20 lbs weight	1 pc
10280.9	Proving Ring	10.000 lbs capacity	1 set
50002/2	Dial Indicator	Range 1" x 0.001"	1 pc
50003/1	Dial Holder / Dial Stand	Magnetic / Screw Ring	1 pc

CUSTOMER GUIDE See Set Number 1280



10280





10290

Soil Compaction Quality
Control in Place

10290 SAND CONE TEST

ASTM D.1556 & AASHTO T.191

Compaction on site is usually effective by mechanical means such as rolling, reaming or vibrating control of compaction, for determining the density of compacted soil in place.

Specification :

10290.1	Sand Cone Bottle	Transparant glass 4 ltr capacity	1 pc
10290.2	Sand Cone Funnel	Seamless metal, turning stopper 6 – 12" dia bottom ½" neck dia	1 pc
10290.3	Base Plate	Cast alumunium, 12" dia	1 pc
10290.4	Graduated Sand	Uncommented sand, passing # 10 retained # 60	1 pc
10290.5	Sample Bag	Plastic Bag	6 pcs
10290.6	Round Scoop	Cast alumunium	1 pc
50050/1	Spoon	Stainless steel	1 pc
50051/1	Trowel	Pointed type	1 pc
50052/1	Chisel	Hardened type	1 pc
50054/1	Rubber mallet	Wooden handle	1 pc

CUSTOMER GUIDE See Set Number 1290

10300 TUBE DENSITY SAMPLER

ASTM D.2573

In this method of determining the dry density of in situ soil, tube density sampler of known volume is driven into the soil by a rammer, tube density is removed, trimmed and the soil obtained is weighed and dried for a moisture/density check.

Specification :

10300.1	Hammer	Machined steel, plated 10 lbs sliding. weight 20" falling height	1 set
10300.2	Sampling Tube	Machined steel, plated 2" i.d 6.7" length	12 pcs



10300

CUSTOMER GUIDE See Set Number 1300



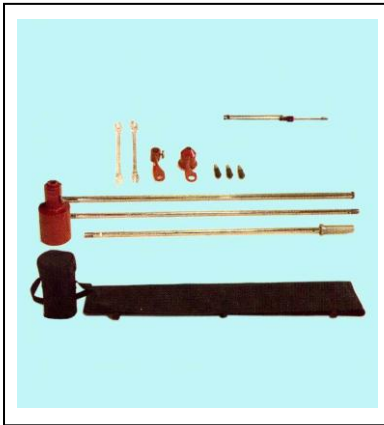
10310

10310 PROVING RING PENETROMETER

Used to determine the bearing capacity of sub grade or to measure soil compaction, light and easy to handle in the field, a rapid means of determining the penetration resistance of soil in shallow exploration surveys.

Specification :

10310.1	Penetration Rod	Plated steel 50 cm length with 5 cm increment line	2 pcs
10310.2	Penetration Cone	machined steel, hardened plated, 5 sq cm cross section area, 30" angle	2 pcs
10310.3	Holder	Wooden handle with T-Piece connector	1 pc
10310.4	Carrying Case	Wooden case	1 pc
10310.5	Proving Ring	100 kg capacity	1 pc
10310.6	Open & Wrench	hardened steel	2 pcs



10320

California Bearing Ratio Value

10320 DYNAMIC CONE PENETROMETER

Dynamic Cone Penetrometer (DCP) provides fast, accurate, in place shear strength in mm/blow and an indication of different strength layers, this instrument can penetration soils to depths of the rate of penetration to CBR (California Bearing Ratio).

Specification :

10320.1	Handle	Stainless steel	1 pc
10320.2	Hammer	machined steel, painted 8 kg weight	1 pc
10320.3	Guide Rod	Stainless steel, 16 mm dia drop height 575 mm	1 pc
10320.4	Anvil	Machined steel, painted	1 pc
10320.5	Penetration Rod	Stainless steel, 16 mm dia 107 cm length	1 pc
10320.6	Cone	Hardened steel, 60 angle, 20 mm dia	3 pcs
10320.7	Penetration Scale	Stainless steel, 16 mm dia 100 cm scale	1 set
10320.8	Carrying Bag	Water proof cloth	1 pc
10320.9	Open & Wrench	Hardened steel	1 pc

CUSTOMER GUIDE See Set Number 1320

10330 SPEEDY MOISTURE TESTER

AASHTO T.217

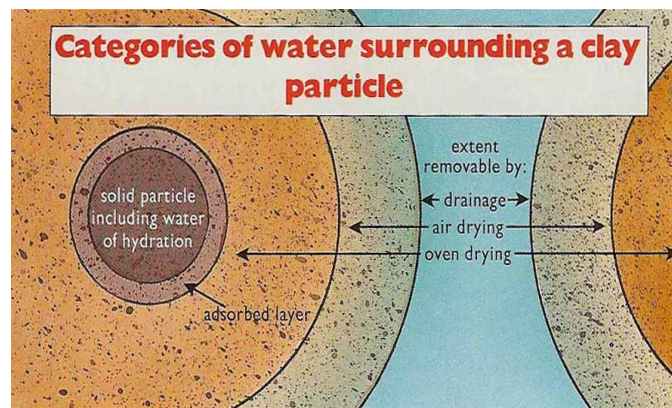
The quantity of gas is indicated on a built pressure gauge which is calibrated in percentage of moisture, a simple conversion by graph on table will give the corresponding moisture content based on dry weight.

Specification :

10330.1	Speedy Gauge	M/C range 0 – 20 %	1 pc
10330.2	Speedy Gauge	sample weight 20 gr	1 pc
10330.3	Calcium Carbide	Pocket digital balance	1 pc
10330.4	Measuring Spoon	Canned	1 can
10330.5	Cleaning Brush	Cast aluminium	1 pc
10330.6	Carrying Case	Wooden/plastic handle	1 pc
10330.7	Ball	Wooden/plastic handle	1 pc
		Steel Made	2 pcs



10330





20100

20100 SAMPLE SPLITTER

For dividing dry material such as gravel or sand.

Specification :

20100.1	Sampler Splitter	Stainless steel, clute width 1/2", 12 holes
20100.2	Sampler Splitter	Stainless steel, clute width 3/4", 12 holes
20100.3	Sampler Splitter	Stainless steel, clute width 1", 12 holes
20100.4	Sampler Splitter	Stainless steel, clute width 1 - 1/2", 8 holes
20100.5	Sampler Splitter	Stainless steel, clute width 2", 8 holes
20100.6	Sampler Splitter	Stainless steel, clute width 2 - 1/2", 8 holes
20100.7	Sampler Splitter	Stainless steel, clute width 3", 8 holes
20100.8	Sampler Splitter	Painted steel, clute width 1/2", 12 holes
20100.9	Sampler Splitter	Painted steel, clute width 3/4", 12 holes
20100.10	Sampler Splitter	Painted steel, clute width 1", 12 holes
20100.11	Sampler Splitter	Painted steel, clute width 1 - 1/2", 8 holes
20100.12	Sampler Splitter	Painted steel, clute width 2", 8 holes
20100.13	Sampler Splitter	Painted steel, clute width 2 - 1/2", 8 holes
20100.14	Sampler Splitter	Painted steel, clute width 3", 8 holes

CUSTOMER GUIDE See Set Number 2100

20110 GILSON SAMPLE SPLITTER

For dividing dry material such as gravel

Specification :

20110.1	Gilson Sampler Splitter	Painted plate, variable clute width 1/8", 1/4", 3/8", 1/2"
20110.2	Gilson Sampler Splitter	Painted plate, variable clute width 1/2", 1", 1 - 1/2", 3"
20110.3	Gilson Sampler Splitter	Painted plate, variable clute width 1", 2", 3", 4"

CUSTOMER GUIDE See Set Number 2110



20110

20120 PRECISION SAMPLE SPLITTER

For dividing dry material such as sand

Specification :

20120.1	Precision Sampler Splitter	Stainless steel, clute width 1/8" x 16 holes
20120.2	Precision Sampler Splitter	Stainless steel, clute width 1/4" x 16 holes
20120.3	Precision Sampler Splitter	Stainless steel, clute width 1/4" x 32 holes
20120.4	Precision Sampler Splitter	Stainless steel, clute width 1/2" x 16 holes
20120.5	Precision Sampler Splitter	Stainless steel, clute width 1/2" x 32 holes

CUSTOMER GUIDE See Set Number 2120



20120

TECHNICAL SERVICE PLEASE CALL 081283009788

E-mail : anugrahbersamateknik@gmail.com



20130

20130 LENGTH GAUGE

BS.812

For rapid measuring the length of aggregate, hard wood base steel plate, distance : 89.0, 62.86, 28.5, 20.1, 14.2 mm.

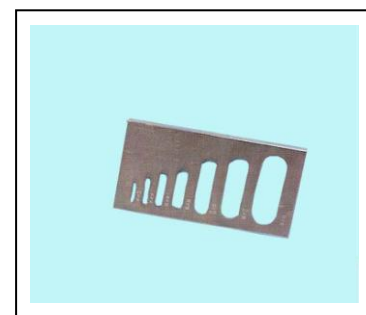
CUSTOMER GUIDE See Set Number 2130

20140 THICKNESS GAUGE

BS.180

For determining the flakiness index of coarse aggregate, galvanized metal sheet, hole size 100 x 33.9, 90 x 26.3, 80 x 19.7, 60 x 14.4, 50 x 10.2, 40 x 7.2, 30 x 4.9

CUSTOMER GUIDE See Set Number 2140



20140

20150 SAND EQUIVALENT TEST

ASTM D.2419 & AASHTO T.176

The test is used to determine the relative proportions of clay like or wood fines and dust in aggregate used for construction purpose.

Specification :

20150.1	Graduated Cylinder	Trasparant fibre glass		
		1 – ¼ " i.d 1 – ½ " i.d 17" height	2 pcs	
20150.2	Stopper Assembly	Rubber stopper, irrigator tube, hose		
		Siphon	1 pc	
20150.3	Weight Foot Assembly	Machined steel, galvanized, 1000 gr weight sand reading indicator	1 set	
20150.4	Stoke Solution	Calcium Chloride, glycerin and Formaldehyde. Solution supplied with plastic mode	1 ltr	
20150.5	Carrying Case	Wooden case with handle	1 pc	
	AB -017/1	Thin Box	Alumunium case with handle	2 pcs
	AB -028/1	Funnel	Plastic narrow mouth	1 pc

CUSTOMER GUIDE See Set Number 2150



20150

20160 WET WASHING SIEVE

For met sieving of soil, cement and fine aggregate.

Specification :

- 20160.1 Wet Washing Sieve# 200, 8" dia., 4" depth
- 20160.2 Wet Washing Sieve# 200, 8" dia., 8" depth



20160



20170

20170 LOS ANGELES ABRASION

ASTM C.131 & AASHTO T.96

The Los Angeles test is used to determine the resistance of aggregate to abrasion, it comprise a heavy steel cylinder, rotated about its horizontal axis at 30 to 33 rpm and mounted on a substantial base, the cylinder revolves on self aligning bearing and incorporates a removable internal shelf.

Specification :

PA .170.1	Los Angeles Abrasion	½ " thick drum, 28" dia 20" width		
		220 V-AC, 33 rpm		
		with automatic counter		1 set
20170.2	Steel Ball	Stainless steel, 2", 415 gr weight	12 pcs	
20170.3	Catching Pan	Galvanized 60 x 60 x 60 cm		1 pc

CUSTOMER GUIDE See Set Number 2170

20180 AGGREGATE IMPACT TEST

BS.812

The apparatus has been designed in a particularly heavy duty form, with specially hardened steel surfaces for minimum wear. The assembly is heavily plated to ensure corrosion resistance and form a rigid frame around the quick release trigger mechanism which ensures an effective free fall of the hammer when released.

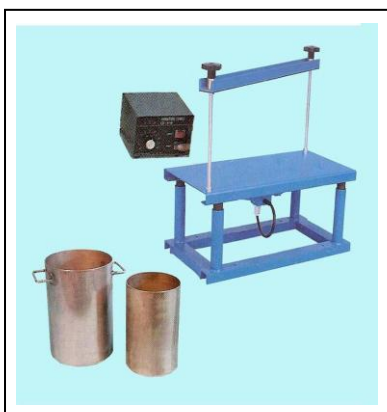
Specification :

20180.1	Impact Machine	Heavy duty steel construction		
		Safety locking bar, built in counter		1 set
20180.2	Cylindrical Measure	Machined steel, 75 mm dia 50 mm deep	1 pc	
20180.3	Tamping Rod	Galvanized steel, 3/8" dia 8" length	1 pc	

CUSTOMER GUIDE See Set Number 2180



20180



20190

20190 BULK DENSITY TEST

ASTM C.29 & AASHTO T.19

Manufactured from heavy gauge steel these bulk density measure comply with the requirements of either BS.812 or ASTM C.29 other than the 3 litre size al measure incorporate carrying handles as standard.

Specification :

20190.1	Container	Rolled steel, galvanized 3 ltr capacity	1 pc
20190.2	Container	Rolled steel, galvanized 10 ltr capacity	1 pc
20190.3	Container	Rolled steel, galvanized 15 ltr capacity	1 pc
20190.4	Container	Rolled steel, galvanized 30 ltr capacity	1 pc

CUSTOMER GUIDE See Set Number 2190

20200 SPECIFIC GRAVITY & ABSORPTION OF FINE AGGREGATE TEST



20200

ASTM C.128 & AASHTO T.84

The pycnometer method described in ASTM C.128 is suitable for determining the particle density of sample aggregates.

Specification :

20200.1	Cone	Brass, 40 mm i.d at the top 90 mm i.d At the bottom 75 mm height	1 pc
20200.2	Tamper	Machined steel, galvanized 340 gr weight, 25 mm dia	1 pc
20200.3	Glass Plate	10 mm thick, 30 x 30 cm	1 pc
AB -016/4	Mixing Bowl	stainless steel 25 cm dia	1 pc
AB -020/3	Volumetric Flask	500 ml capacity	1 pc
AB -049/1	Scraper	Plastic handle	1 pc

CUSTOMER GUIDE See Set Number 2200

20210 MECHANICAL SPECIFIC GRAVITY & ABSORPTION OF COARSE AGGREGATE TEST

ASTM C.127 & AASHTO T.85

As with any porous materials, the value obtained for the particle for the density of an aggregate will depend on the method of test and apparatus used, different particle size s within a sample often have different particle densities.

The term particles density expressed in mg/m^3 is numerically equal to the specific gravity.

Specification :

20210.1	Mounting Table	Welded steel frame, painted	1 pc
20210.2	Water Container	20 ltr cap. Approx, overflow	1 pc
AB -006/1	Balance	20 kg capacity, 1 gr sensitivity	1 pc
20210.3	Sample Basket	# 8 mesh, 200 mm dia, 200 mm height	1 pc

CUSTOMER GUIDE See Set Number 2210



20210

20210.A DIGITAL SPECIFIC GRAVITY & ABSORPTION OF COARSE AGGREGATE TEST



20210.A

ASTM C.127 & AASHTO T.85

As with any porous materials, the value obtained for the particle for the density of an aggregate will depend on the method of test and apparatus used, different particle size s within a sample often have different particle densities. The term particles density expressed in mg/m^3 is numerically equal to the specific gravity.

Specification :

20210.A1	Mounting Table	Welded steel frame, painted	1 pc
20210.A2	Water Container	20 ltr cap. Approx, overflow	1 pc
50008/7	Balance	Digital balance 220 V 6100 gr x 0.1 gr cap	1 pc
20210.A3	Sample Basket	# 8 mesh, 200 mm dia, 200 mm height	1 pc

CUSTOMER GUIDE See Set Number 2210.A



20220

20220 ORGANIC IMPURITIES TEST

ASTM C.40

In aggregate contains organics impurities it may not be suitable for inclusion in concrete, organic impurities usually tannic acid its derivatives may interfere with the chemical reactions of hydration. Impurities are more likely to be found in fine (sand) aggregate.

Specification :

20220.1	Glass Bottle	300 ml cap, graduated glass with with stopper	3 pcs
20220.2	Stoke Solution	Sodium hydroxide solution (NaOH)	1 ltr
20220.3	Standard Colour Chart	5 standard colour	1 pc

CUSTOMER GUIDE See Set Number 2220

20230 SOUNDNESS TEST

ASTM C.88 & AASHTO T.104

The presence of organic matter and certain chemicals can have a considerable influence on the strength and durability of concrete. The ability of aggregates to resist excessive change in volume (soundness) due to physical changes in the environment is also of importance.

Specification :

20230.1	Stoke Solution	Sodium sulphate solution (Na ₂ SO ₄)	1 ltr
20230.2	Beaker Glass	1000 ml capacity	1 pc
20230.3	Thermometer	Glass 0 – 100° C	1 pc

CUSTOMER GUIDE See Set Number 2230



20230

20240 VACUUM STAND



The term density refers to mass per unit volume and is normally expressed in mg/mg³ (g/cm³). The density of mass of soil is of interest to the engineer for a variety of reasons including the design of earthwork and foundations and slope stability analysis.

CUSTOMER GUIDE See Set Number 2240

Need help in playing out your lab or specifying equipment needs? Call our experienced technical services staff for a complete listing of equipment.

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30100 AIR PERMEABILITY OF PORTLAND CEMENT BY FINENES DEVICE



30100

ASTM C.204 & AASHTO T.152

The fineness of cement is a property which must be carefully controlled during the manufacturing process. The total specific surface of the cement represents the surface area available for hydration. Various methods are in use to measure the specific surface of cements for most purpose air permeability methods.

Specification :			
30100.1	Stand	Polished wood	1 pc
30100.2	U-Tube Manometer	Glass tubing with valve	1 pc
30100.3	Permeability Cell	Glass	1 pc
30100.4	Perforated Disc	Non Corroding Metal	1 pc
30100.5	Plunger	Stainless steel	1 pc
30100.6	Stoke Solution	Dibutylphthalate	1 btl
30100.7	Filter Paper	Type 1, grade B	1 box
50027/1	Funnel	Glass	1 pc

CUSTOMER GUIDE See Set Number 3100

30110 SPECIFIC GRAVITY OF HYDRAULIC CEMENT TEST

ASTM C.188 & AASHTO T.133

It is necessary to know the specific gravity of cement various reasons related to its quality and use. In particular it will be necessary to determine the specific gravity as part of the determination of the specific surface of a cement.

Specification :			
30110.1	Le Chatelier Flask	250 ml cap. The neck graduated 0 – 1 ml and 15 – 24 ml	1 pc
30110.2	Kerosene	Deaired kerosene	1 ltr
50027/1	Funnel	Glass, narrow mounth	1 pc
50034/1	Thermometer	Glass 0 – 50° C	1 pc
50048/1	Spatula	150 mm blade length	1 pc



30110

CUSTOMER GUIDE See Set Number 3110

30120 TIME OF SETTING OF HYDRAULIC CEMENT BY VICAT NEEDLE



30120

ASTM C.187 & AASHTO T.131

Determination of setting time and soundness of cement paste of standard consistence. The vicat method is usually specified as the test used to determine the water content which produce the desired consistence.

Specification :			
30120.1	Vicat Apparatus	Cast alumunium frame stainless steel rod 0 -50 mm scale	1 set
30120.2	Initial Needle	Stainless steel needle, with footing brass thread	1 pc
30120.3	Final Needle	Stainless steel needle, brass thread	1 pc
30120.4	Conical Ring Mold	70 mm base dia, 60 mm top dia, 40 mm height	1 pc
30120.5	Glass Plate	10 mm thick, 12 x 12 cm	1 pc

CUSTOMER GUIDE See Set Number 3120

30130 TIME OF SETTING OF HYDRAULIC CEMENT BY GILMORE APPARATUS

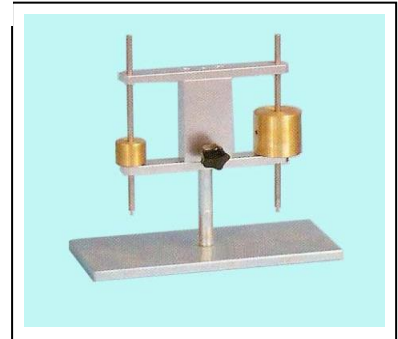
ASTM C.266 & AASHTO T.154

Used to determine the time of setting of cement, apparatus consist of one needle point of each size base, support shaft and horizontal arms.

Specification :

30130.1	Gilmore Apparatus	Cast aluminium frame galvanized, steel rod & weight	1 set
30130.2	Initial Needle	1/12" dia, stainless steel	1 pc
30130.3	Final Needle	1/24" dia, stainless steel	1 pc
30130.4	Glass Plate	5 mm thick, 80 x 80 mm approximately	1 pc

CUSTOMER GUIDE See Set Number 3130



30130

30140 COMPRESSIVE STRENGTH OF HYDRAULIC CEMENT MORTAR



30140

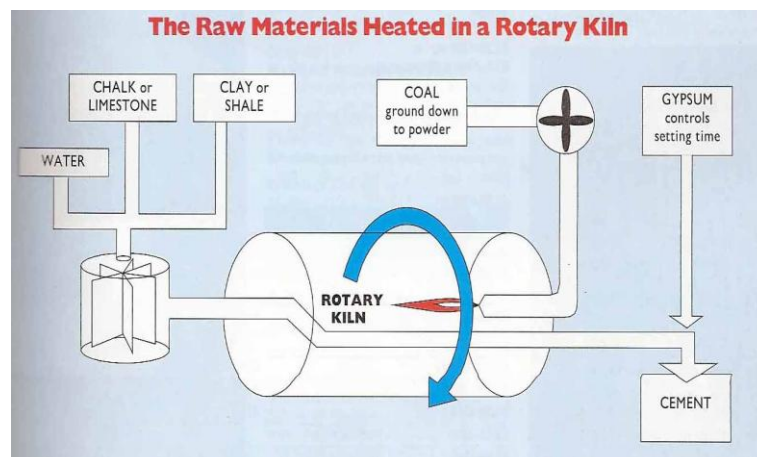
ASTM C.109 & AASHTO T.106

To perform this test, a sample is placed on metal surface which is then raised and dropped through a known height. The apparatus and methods of test are all similar except that BS 4551 and ASTM C.230.

Specification :

30140.1	Cement Cube Mold	Cast iron 3 gang 2" x 2" x 2"	1 pc
30140.2	Frame Table	Welded steel 10" dia 1/2" drop, brass table, han operated	1 pc
30140.3	Flow Mold	brass	1 pc
30140.4	Tamper	Plastic 1/2" x 1" face	1 pc
30140.5	Graduated Cylinder	250 ml capacity	1 pc
30140.6	Scrapper	Plastic handle	1 pc

CUSTOMER GUIDE See Set Number 3140



CONCRETE SAMPLING MOULD

Concrete specimens are manufactured, cured and stored under controlled conditions for a specified period then crushed in a compression machine. The type and size of specimen will very depending upon a number of factors and specifications. Generally cubes and cylinders are tested in compression although part of beams may be tested.



40100.A

40100.A CONCRETE CYLINDER MOULD

Specification :
Cast iron, for forming concrete sample of 15 cm in dia, 30 cm height split type

CUSTOMER GUIDE See Set Number 4100.A

Cylinder capping to provide inform loading surfaces for loading

40100.B CONCRETE CUBE MOULD

Specification :
Cast iron, for forming 15 x 15 x 15 cm concrete sample

CUSTOMER GUIDE See Set Number 4100.B

$$\text{Maximum Compressive Strength (N/mm}^2\text{)} = \frac{\text{Machine capacity (kN)}}{\text{Cross-sectional area of specimen to be tested}}$$



40100.B



40110

40110 CONCRETE BEAM MOULD

Cast iron, for forming concrete beam sample

Specification :
Cast iron, for forming concrete beam sample
40110.1 Concrete Beam 15 x 15 x 60 cm
40110.2 Concrete Beam 15 x 15 x 75 cm
40100.3 Concrete Beam 20 x 20 x 80 cm

CUSTOMER GUIDE See Set Number 4110



CONCRETE COMPRESSION MACHINE

The quality of concrete is important if structures formed from this versatile material are to be safe and serve the purpose for which they were constructed.

40120.A HAND OPERATED CONCRETE COMPRESSION MACHINE

ASTM C.39

Specification :

Steel frame, 6" force gauge dia (Calibrated) Hand operated hydraulic pump

- 40120.A.1 Hand operated Concrete Compression Machine 500 kN cap, 5 kN readability
- 40120.A.2 Hand operated Concrete Compression Machine 1000 kN cap, 10 kN readability
- 40120.A.3 Hand operated Concrete Compression Machine 1500 kN cap, 10 kN readability
- 40120.A.4 Hand operated Concrete Compression Machine 2000 kN cap, 10 kN readability

CUSTOMER GUIDE See Set Number 4120.A



40120.A



40120.B

40120.B ELECTRIC CONCRETE COMPRESSION MACHINE

ASTM C.39

Specification :

Steel frame, 6" force gauge dia (Calibrated) Electric operated hydraulic pump

- 40120.B.1 Electric Concrete Compression Machine 500 kN cap, 5 kN readability
- 40120.B.2 Electric Concrete Compression Machine 1000 kN cap, 10 kN readability
- 40120.B.3 Electric Concrete Compression Machine 1500 kN cap, 10 kN readability
- 40120.B.4 Electric Concrete Compression Machine 2000 kN cap, 10 kN readability

CUSTOMER GUIDE See Set Number 4120.B

40120.C ELECTRIC DOUBLE GAUGES CONCRETE COMPRESSION MACHINE

ASTM C.39

Specification :

Steel frame, 6" force gauge dia (Calibrated) Electric operated hydraulic pump

- 40120.C.1 Electric Concrete Compression Machine 500 kN cap, 5 kN readability
- 40120.C.2 Electric Concrete Compression Machine 1000 kN cap, 10 kN readability

- 40120.C.3 Electric Concrete Compression Machine 1500 kN cap, 10 kN readability
- 40120.C.4 Electric Concrete Compression Machine 2000 kN cap, 10 kN readability

CUSTOMER GUIDE See Set Number 4120.C



40120.C



40120.D

40120.D DIGITAL CONCRETE COMPRESSION MACHINE

ASTM C.39

Specification :

Steel frame, 6" force gauge dia (Calibrated) Electric operated hydraulic pump

- 40120.D.1 Electric Concrete Compression Machine 500 kN cap, 1 kN readability
- 40120.D.2 Electric Concrete Compression Machine 1000 ton cap, 1 kN readability
- 40120.D.3 Electric Concrete Compression Machine 1500 kN cap, 1 kN readability
- 40120.D.4 Electric Concrete Compression Machine 2000 kN cap, 1 kN readability

CUSTOMER GUIDE See Set Number 4120.D

40130 VERTICAL CYLINDER CAPPING

ASTM C.617

Equipment for forming caps on ends of 15 cm diameter concrete cylinder to provide inform loading surfaces for loading surfaces for loading.

Specification :

40130.1 Vertical Cylinder Capper	Cast aluminium frame, rotating ground table For 150 mm dia concrete cylinder	1 Set
40130.2 Capping Compound Warmer	Approx 3 ltr cap, heating temperature up to 200 C, 220 V-AC	1 Set
40130.3 Capping Ladle	Stainless steel, ladle wooden handle	1 Pc
40130.4 Cylinder Carrier	Double handle, snap clamp for 150 mm dia Concrete cylinder	1 Pc
40130.5 Capping Compound	Powder form, approx 115 C pouring temperature	25 kgs



40130

CUSTOMER GUIDE See Set Number 4130

CONCRETE BEAM TESTING MACHINE

The flexural and transverse strength of concrete is of interest to engineers for many reasons. Movement of structures which may be induced by temperature change, ground vibration, cyclic loading of road pavements and many other external influences will set up internal stress within a concrete member.



40140.A

40140.A HYDRAULIC CONCRETE BEAM TESTING MACHINE

ASTM C.78

Specification :

A simple beam with third point loading 10 ton capacity, hydraulic hand pump manometer reading sample size 15 x 15 x 60 cm, welded steel construction.

CUSTOMER GUIDE See Set Number 4140.A

40140.B MECHANICAL CONCRETE BEAM TESTING MACHINE

ASTM C.78

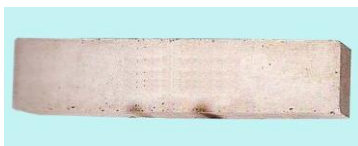
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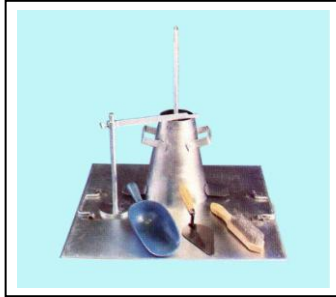
A simple beam with third point loading 10.000 lbs capacity, mechanical jack, proving ring reading sample size 15 x 15 x 60 cm, welded steel construction.

CUSTOMER GUIDE See Set Number 4140.B



40 140.B





40150



40150.A

40150 SLUMP TEST

ASTM C.143 & AASHTO T.119

This test is carried out by filling the slump cone with freshly mixed concrete which is tamped with a steel rod in three layers, the concrete is levelled off with the top of the slump cone.

Specification :

40150.1	Slump Cone	Heavy gauge sheet steel 4" top dia 8" bottom dia, 12" height	1 Pc
40150.2	Inspection Scale	Machined steel 0-15 cm slump measurement 1 cm increment	1 Pc
40150.3	Base Plate	Steel sheet carrying handle 650 x 650 x 5 mm	1 Pc
50047/2	Scoop	Cast aluminium	1 Pc
50051/1	Trowel	Pointed type	1 Pc
50055/1	Brush	Steel wire	1 Pc
40121.4	Tamping Rod	Machined steel, galvanized 16 mm dia 600 mm length	1 Pc

40150.A	Slump Test	Field type
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40160 AIR CONTENT OF FRESH MIXED CONCRETE

ASTM C.231 & AASHTO T.152

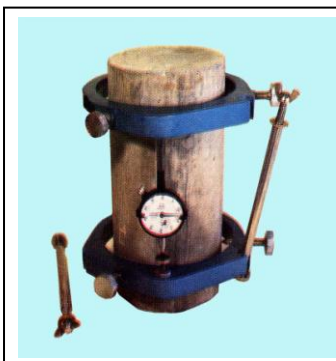
The determination of air content of freshly made concrete, the primary purpose of entraining air in concrete is to give the required resistance to weathering.

Specification :

40160.1	Air Entrainment Meter	Approx 5 ltr capacity, 2" maximum aggregate size, direct reading gauge 0-10% manometer, hand pump	1 Set
50047/1	Scoop	Cast aluminium	1 Pc
50051/1	Trowel	Pointed type	1 Pc
40160.2	Straight Edge	40 cm length	1 Pc
50054/1	Rubber Mallet	Wooden handle	1 Pc
40160.3	Tamping Rod	Machined steel, galvanized 16 mm dia 600 mm length	1 Pc



40160



40170 MODULUS OF ELASTICITY IN CONCRETE TEST

Modulus of elasticity may be determined using a compressometer to measure the strain and deformation characteristics of specimens.

Specification :

Concrete cylinder sample during compression test, cast aluminium frame.
Dial indicator 30 x 0.01 mm.

40180 LABORATORY CONCRETE MIXER

For mixing trial bathes of concretes for mix design, approx 70 ltr capacity, 4 mixing blades, welded steel frame 2 wheels for easy movement electromotor 1/4 Hp, 220 V-AC, 1 Phase.

- Portable and compact
- Tipping Mechanism
- Simple to clean and maintain



40180



40190

40190 VIBRATING TABLE

Steel construction 50 x 50 cm table separate control box, variable speed up to 3.600 rpm for compacting aggregate in steel container or concrete sample in cube / cylinder mold.

40200 UNIVERSAL TESTING MACHINE

For columns steel frame, double action hydraulic cylinder for compression and tension.

Specification :

Compression Force Capacity	150 tons
Tension Force Capacity	50 tons
Double Force Gauge	12' dia
Motorized	Electric ½ HP, Vertical
Sample Bar Size	6 – 19 mm dia
Concrete Sample	Cube 15 x 15 x 15 cm Cylinder 15 x 30 cm



40200

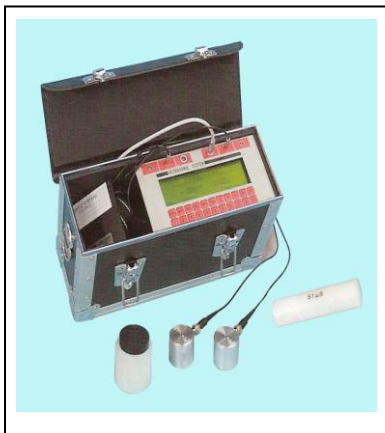
40210 CONCRETE TEST HAMMER

ASTM C.805 & BS.1881

Non destructive measurement of the concrete compressive strength, control of the uniform concrete quality (in situ concrete and prefabricated structures) and detection of weak spots.



40210



40220

40220 ULTRASONIC INSTRUMENT

ASTM C.597 & AASHTO T.37 & BS.1881

For the non destructive testing of concrete structures and elements.
 Determination of concrete strength in combination with concrete test hammer SCHMIDT.
 Localization of cracks and cavities.
 Localization of defects due to fire and frost.
 Measurement of concrete uniformity.
 Measurement series can be transferred to a PC or a printer for subsequent evaluation.

40230 COVER METER

Design for extreme ease of operation for basic cover to steel reinforcement cover detection and bar sizing facilities plus a range of invaluable roles for use in reinforced concrete condition surveys and check measurements.

Specification :
 Measuring range 5 mm u to 117 mm depth with single head (16 mm dia : 97 mm depth)
 Detects up to 150 mm (16 mm dia. : 140 mm)
 Accuracy better than BSI 1881 : 204
 Settable offset feature to allow irregular/profiled surfaces
 Operates on four alkaline batteries, 50 hours use



40230



60100

60100 SPECIFIC GRAVITY OF SEMI SOLID BITUMINOUS MATERIALS

ASTM D.70& AASHTO T.228

Weight / volume relationships are useful for shipping purposes and for the calculation of mix proportions during mix design, the test method determines the ratio of a given volume of binder to the weight of an equal volume of water at a given temperature. Usually 25⁰ C Hubbard Carmick type pycnometer are used, being particularly suitable as they combine ease of filling and cleaning with long term stability.

Specification :

60100.1	Picnometer	Hubbard type 24 ml capacity	1 Pc
60100.2	Picnometer	Hubbard type 25 ml capacity	1 Pc
50034/4	Thermometer	Range 0 – 200 ⁰ C	1 Pc

CUSTOMER GUIDE See Set Number 5100

60110 FLASH AND FIRE POINT BY CLEVELAND OPENCUP

ASTM D.92. D.117. D.803& AASHTO T.48

The are a number of test methods using different equipment with closed or open cups. The Cleveland flash cup apparatus is used to test cutback bitumen, the apparatus utilizes the open cup test method.



60110

Specification :

60110.1	Flash Cup	Brass, insulation handle	1 Pc
60110.2	Burning Pipe	Brass pipe, insulation handle	1 Pc
60110.3	Flash Cup Plate	Steel plate	1 Pc
60110.4	Flash Cup Plate Support	Adjustable height metal, thermometer holder	1 Pc
60110.5	Y-Connector	Brass, provided with gas hose	
50013/1	Bunsen Burner	Heat resources	1 Pc
50057/2	Asbestos Wire Gauze	15 x 15 cm	1 Pc
50034/6	Thermometer	Range 0 – 400 ⁰ C	1 Pc

CUSTOMER GUIDE See Set Number 5110



60110.E

60110.E ELECTRIC FLASH AND FIRE POINT BY CLEVELAND OPEN CUP

ASTM D.92. D.117. D.803& AASHTO T.48

The are a number of test methods using different equipment with closed or open cups. The Cleveland flash cup apparatus is used to test cutback bitumen, the apparatus utilizes the open cup test method.

Specification :

60110.A.1	Flash Cup	Brass, insulation handle	1 Pc
60110.A.2	Cleveland electric	Electric, 220 V-AC, heating speed control.	1 Pc
50034/6	Thermometer	Range 0 – 400 ⁰ C	1 Pc

CUSTOMER GUIDE See Set Number 5110.E



60120

60120 LOSS ON HEATING / THIN FILM TEST

ASTM D.6 D.1754& AASHTO T.47 T.179

These test are quantative test that determine the effects of ageing on bitumen. Essentially they measure the resistance to hardening and identify bitumen which is either too volatile or too susceptible to oxidation.

Specification :

60120.1	Rotating Shelf Oven	Variable temperature oven, cast aluminium Rotating shelf 5-6 rpm, extreme electromotor drive, 220 V-AC provided with thermometer	1 pc
50017/1	Thin Box	55 mm i.d.approx, aluminium sheet, seamless	12 pc

CUSTOMER GUIDE See Set Number 5120

60130 DISTILLATION OF CUTBACK ASPHALTS

ASTM D.402.& AASHTO T.78

Distillation methods are used to determine whether the binder has the required volatility or evaporation characteristics. The method will also determine the amount of water in emulsion. Low water content are necessary to prevent foaming of binders when heated above the boiling point of water.

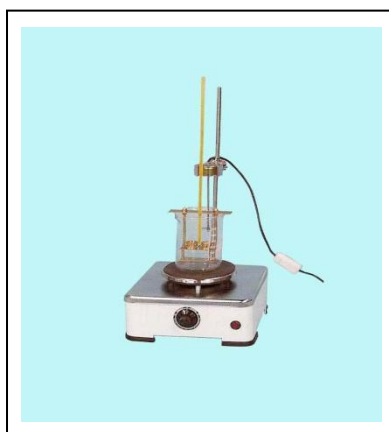
Specification :

60130.1	Flask	Heat resistance glass 500 ml capacity, with side arm	1 Set
60130.2	Condensor	Glass, jacketed	1 Pc
60130.3	Adaptor	Heat resistance glass	1 Pc
60130.4	Shield	Metal asbestos lined, glass window	1 Pc
60130.5	Shield and Flask Support	Variable height adjustment	1 Pc
60130.6	Support and Clamp	Metal provided with clamps	1 Set
50013/1	Bunsen Burner	Heat resources	1 Pc
50057/2	Asbestos Wire Gauze	15 x 15 cm	1 Pc
50019/3	Graduated Cylinder	100 ml capacity	1 Pc
50034/6	Thermometer	Range 0 – 400 ⁰ C	1 Pc

CUSTOMER GUIDE See Set Number 5130



60130



60140

60140 SOFTENING POINT TEST

ASTM D.36 & AASHTO T.53

Bituminous binders do not change from the solid state to the liquid state at any definite temperature. By carefully controlling the rise in temperature applied to a sample of binder it is possible to define the temperature at which the binder will flow a given distance. The consistency and hence the category of the binder can therefore be determined.

Specification :

60140.1	Shouldered Ring Assembly	Machined brass, height adjustment	1 Set
60140.2	Standard Ball	Stainless Steel Ball	2 Pcs
60140.3	Flash Support	Variable height adjustment	1 Pc
60140.4	Support Assembly	Metal provided with thermometer holder	1 Set
50010/1	Hot Plate	500 watt, single burner	1 Pc
50057/2	Asbestos Wire Gauze	15 x 15 cm	1 Pc
50021/3	Beaker Glass	600 ml capacity	1 Pc
50034/2	Thermometer	Range 0 – 100 ⁰ C	1 Pc

CUSTOMER GUIDE See Set Number 5140



60150

60150 LABORATORY PENETRATION TEST

ASTM D.5& AASHTO T.49

The penetration test along with the softening point test is one of the most widely used tests for characterizing bitumen grades. The consistency of a bitumen is determined by measuring the penetration of a standard needle under a known load at a fixed temperature over a known time.

Specification :

60150.1	Penetrometer	Cast aluminium frame, 4-1/2" dial indicator 400 div of 0.1 mm each, single knob control, weight of needle and plunger 50 gr	1 Set
60150.2	Penetration Needle	Steel needle with brass shank, 1 mm dia	2 Pcs
60150.3	Transfer Dish	Glass, 100 mm i.dapprox	1 Pc
50017/1	Thin Box	55 mm i.dapprox, aluminium sheet seamless	2 Pcs

CUSTOMER GUIDE See Set Number 5150

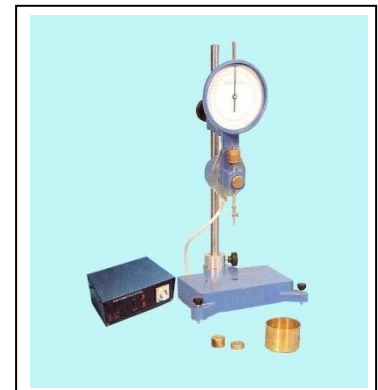
60150.E ELECTRIC LABORATORY PENETRATION TEST

ASTM D.5& AASHTO T.49

The penetration test along with the softening point test is one of the most widely used tests for characterizing bitumen grades. The consistency of a bitumen is determined by measuring the penetration of a standard needle under a known load at a fixed temperature over a known time.

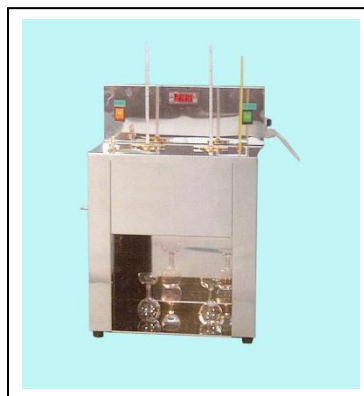
Specification :

60150.E.1	Penetrometer	Electric control box, 220 V-AC variable timer, ON-OFF and START switch for automatic plunger release cast aluminium frame, 4-1/2" dial indicator, 400 x 0.1 mm dial, knob control : manual + electric, weight of needle and plunger 50 gr	1 Set
60150.E.2	Penetration Needle	Steel needle with brass shank, 1 mm dia	2 Pcs
60150.E.3	Transfer Dish	Glass, 100 mm i.dapprox	1 Pc
50050/1	Thin Box	55 mm i.dapprox, aluminium sheet seamless	2 Pcs



60150.E

CUSTOMER GUIDE See Set Number 5150.E



60160

60160 SAYBOLT VISCOSIMETER

Viscosity is a fundamental characteristic of bitumen. It can determine how the material will function when in use e.g the readiness to flow at a given temperature and the temperature required for correct application.

Specification :

60160.1	Viscosimeter	Stainless steel bath, motor stirrer, 220 V-AC Thermostat control panel 2 tubes	1 Set
60160.2	Viscosimeter Tube	Brass, seamless provided with tips and tip Wrench	2 Pcs
60160.3	Tube Wrench	T-Wrench	1 Pc
60160.4	Pipete	Glass with rubber bulb	1 Pc
60160.5	Thermometer Support	Aluminium plate	2 Pcs
60160.6	Flask	60 ml capacity	2 Pcs
50027/1	Funnel	Glass, 60 angle	1 Pc
50034/2	Thermometer	Range 0 – 100° C	1 Pc

CUSTOMER GUIDE See Set Number 5160

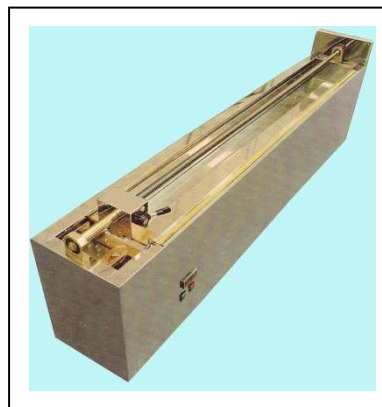
60170 DUCTILITY OF BITUMINOUS MATERIALS TEST

ASTM D.113& AASHTO T.51

Ductility is a measure of the cohesive strength of a binder, the method can be used as part of a series of classification tests to determine binder properties.

Specification :

60170.1	Ductility Mold	From sample shape and hold end during test made of brass, provided with base	1 Set
60170.2	Ductility Machine	Electric 220 V-AC stainless steel bath, provided with cooling control pulling speed 5 mm/min, travel range 150 cm	1 Set



60170

CUSTOMER GUIDE See Set Number 5170



60180

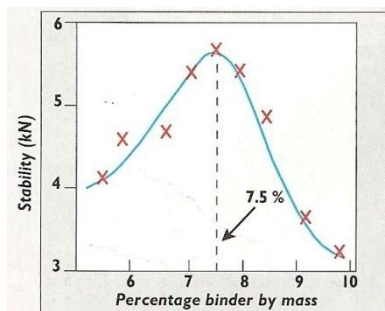
60180 MARSHALL TEST

ASTM D.1559 & AASHTO T.245

The correct design and physical testing of bituminous mixtures for roads and airfields is important if sound, durable pavements are to be constructed economically, and to ensure minimum maintenance during the design life of the pavement. The Marshall apparatus for measuring the resistance to plastic flow of cylindrical specimen of bituminous paving mixture loaded on the lateral surface.

Specification :

60180.1	Compression Machine	Steel frame, electric 220 V-AC, 1 HP, 1 phase, speed 2" per minutes	1 Set
60180.2	Compaction Mold	Machined steel, plated 4" dia 3" high with collar and base plate	1 Set
60180.3	Stability Mold	Cast aluminium, split type 4" i.d 4" wide	1 Set
60180.4	Compaction Hammer	Machined steel, plated 10 lbs, hammer weight 18" drop height	1 Set
60180.5	Compaction Pedestal	Wooden base with steel platen	1 Set
60180.6	Compaction Mold Holder	Machined steel, quick clamping system	1 Set
60180.7	Extruder	Steel frame, hydraulic system	1 Set
60180.8	Flow Meter	Cast aluminium, clamping bolt, with dial indicator 30 x 0,01 mm	1 Set
60180.9	Water Bath	Stainless steel, water heater 220 V-AC thermostat 30-85 ^o C	1 Set
50001/6	Proving Ring	6000 lbs capacity	1 Set



CUSTOMER GUIDE See Set Number 5180

● **Temperature**

Bring all mix constituents and compaction mould assemblies to the required temperature.e.g. for a 50 Pen bitumen a temperature of 235°C is appropriate.

● **Mix**

Mix the heated constituent each batch separately ensuring that the specimen is at the correct temperature for compaction. The bowl temperature should be the maintainedby adjusting the Isomantle heater. Time from charging the bowl to completing the mix procedure is 2 minutes.

● **Compact**

Charge the heated mould assembly with the mixture; apply 50 blows of the hammer at a rate 60 blows minute. Reverse the mould, apply 50 blows to the lower face of a specimen. On completion, immerse the mould and specimen in cold water for at least 10 minutes.

● **Extrude and Store**

Extrude the specimen from the mould and store at ambient temperature until ready to test.

● **Density**

Weight in air water; calculate the relative density and compacted aggregate density.

● **Temperature**

Prior to testing immerse in water at 60°C for 45 to 75 minutes. Bring the breaking head to the same temperature immediately prior to testing.

● **Stability and Flow**

Test each of the specimens in turn commencing with the richer binder contents. Test for stability and flow at a nominal rate of strain of 50 mm/minutes. Complete each test within 40 second of removing the specimen from the water bath to recording the reading.

60190 AUTOMATIC MARSHALL COMPACTOR

BS. 598

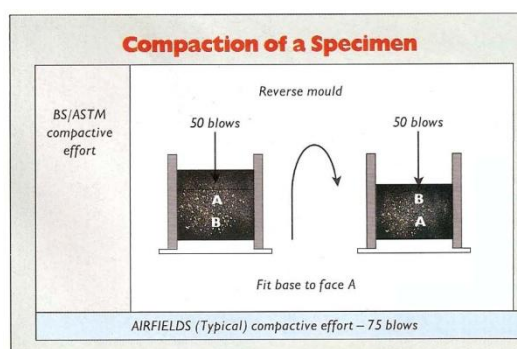
The use of automatic compaction will result in consistence and repeatable laboratory specimens. Testing house and design consultant who use the Marshall method of mix design will benefit from automatic compaction apparatus, which release staff for other work during the compaction process.

Specification :

Compaction Foot Diameter	98.52 mm
Sliding Weight	4535 gr
Height of Drop	457 mm
Weight	224 kg
Power	220 – 240 V, 50Hz, 1 ph



60190



60200

60200PERCENTAGE REFUSAL DENSITY

BS 598

Percentage Refusal Density (PRD) is defined as the ratio dried bulk density of the sample to the final density (refusal density) expressed as a percentage).

Specification :

60200.1	PRD Spilt Mould and Baseplate	1 pcs
60200.2	PRD Baseplate	1 pcs
60200.3	Small Tamping Foot	102 mm diameter 1 pcs
60200.4	Large Tamping Foot	146 mm diameter 1 pcs

60210 WATER IN BITUMINOUS MATERIALS

ASTM D.95, D.244& AASHTO T.55, T.59

Used to determine the water in petroleum product or bituminous materials by distilling them with volatile solvent. The equipment comprises electric heater with thermoregulator, glass still, support stand, condensor, receiving trap, clamps.



60210

EXTRACTION

ASTM D.2172 & AASHTO T.164

ASTM & AASHTO specify various test methods for the recovery of bitumen from bituminous mixture. Bitumen is extracted using specified solvents and the bitumen content calculated by difference. The methods can be used for specification acceptance, service evaluation, quality control and research. Trichloroethylene or dichloromethane is used as the solvent for both methods described.

60220 HAND OPERATED CENTRIFUGE EXTRACTOR

Specification :

60220.B.1	Centrifuge Extractor	Hand operated, aluminium housing, removable cover and bowl 1500 gr capacity	1 Set
50066/1	Filter Paper	Low ash filter paper	1 Box

CUSTOMER GUIDE See Set Number 5220



60220



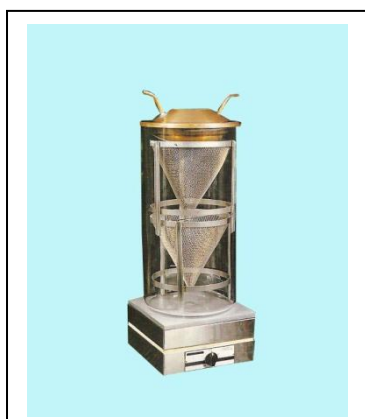
60220.E

60220.E ELECTRIC CENTRIFUGE EXTRACTOR

Specification :

60220.E.1	Centrifuge Extractor	Electric 220 V-AC variable speed DC motor up to 3600 rpm. Aluminium housing, removable cover and bowl 1500 gr capacity	1 set
50066/1	Filter Paper	Low ash filter paper	1 box

CUSTOMER GUIDE See Set Number 5220.A



60220.A

60220.A REFLUX EXTRACTOR

Specification :

60220.A	Reflux Extractor		
	Consist of :		
60220.A.1	Glass jar	Pyrex, 6" i.d approx	1 pc
60220.A.2	Funnel	Two wire mesh screen cone	1 pc
60220.A.3	Condensor	Brass/copper	1 pc
50010/2	Hot Plate	220 v-AC, 1000/1500 Watt	1 set
50066/2	Filter Paper	Low ash filter paper	1 box
50057/2	Asbestos Wire Gauze	15 x 15 cm	1 pc

CUSTOMER GUIDE See Set Number 5220.A

60230 CORE DRILLING MACHINE

The most direct method of assessing hardened construction materials such as concrete is by cutting a specimen from the area to be checked. A fast and simple means of obtaining specimens of adequate size and quality is by core drilling.

Specification :

60230.1	Frame	Iron cast	1 Set
60230.2	Engine	Gasoline engine, vertical drilling position	1 Set
60230.3	Diamond Bit (import)	4" diameter	1 Set
60230.4	Field Sample Tong	Welded steel	1 Pc



60230

CUSTOMER GUIDE See Set Number 5230



60240

60240 MOT STRAIGHT EDGE

A straight edge, approximately 3 meters in length and of straight section may be used to determine lateral surface regularity of a road surface. This lightweight apparatus is equally supported at both ends producing a set height between the road surface and the beam. Any vertical irregularity is measured using incremented wedges. The straight edge can also be used on floor slabs and other areas where regularity of finish is important.

Specification :

60240.1	Mot Straight	Aluminium profile, 3 meter length, with handle	1 Set
60240.2	Metric Wedges	Variable measurement from 2.5 – 7.5 cm, machined cast aluminium	1 Pc

CUSTOMER GUIDE See Set Number 5240

60250 BENKELMAN BEAM

The ability of a pavement to flex without failure when subjected to loading is an important feature of any construction designed to carry moving loads. Deflection can be measured by using a long beam resting on the pavement surface at one end and balanced near its centre point. By stabilising the opposite end of the beam using a suitable load e.g a vehicle, small deflections caused by loads applied adjacent to the free end are magnified and can be read from a suitable dial gauge.

Specification :

60250.1	Fixed Beam	Aluminium profile frame, 3 points adjuster, with vibrator and dial holder aluminium	1 Set
60250.2	Tire Gauge	120 psi capacity	1 Pc
60250.3	Surface Thermometer	Range 0 – 100 ^o C	1 Pc
50002/6	Dial Indicator	Range 30 mm x 0.01 mm	1 Pc



60250

CUSTOMER GUIDE See Set Number 5250

PROVING RING

50001/1	Proving Ring	100 kg capacity
50001/2	Proving Ring	250 kg capacity
50001/3	Proving Ring	500 kg capacity
50001/4	Proving Ring	1000 kg capacity
50001/5	Proving Ring	2000 kg capacity
50001/6	Proving Ring	6000 kg capacity
50001/7	Proving Ring	10000 kg capacity



DIAL INDICATOR

50002/1	Dial Indicator	0.5" x 0.0001"
50002/2	Dial Indicator	1.0" x 0.0001"
50002/3	Dial Indicator	2.0" x 0.0001"
50002/4	Dial Indicator	10 mm x 0.01 mm
50002/5	Dial Indicator	20 mm x 0.01 mm
50002/6	Dial Indicator	30 mm x 0.01 mm
50002/7	Dial Indicator	50 mm x 0.01 mm



DIAL HOLDER

50003/1	Magnetic Dial Holder
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CENT O GRAM BALANCE

50004/1	Cent O Gram Balance	311 gr capacity 0.01 gr sensitivity
50004/2	Cent O Gram Balance	311 gr capacity 0.01 gr sensitivity with dial adjustment



TRIPLE BEAM BALANCE

50005/1	Triple Beam Balance	2.610 gr capacity 0.1 gr sensitivity
50005/2	Triple Beam Balance	2.610 gr capacity 0.1 gr sensitivity With dial adjustment



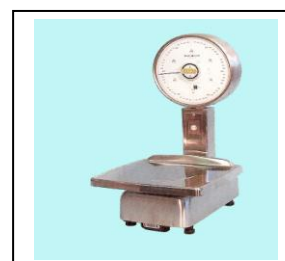
HEAVY DUTY SOLUTION BALANCE

50006/1	Heavy Duty Solution Balance (Local)	20 kg capacity 1 gr sensitivity
50006/2	Heavy Duty Solution Balance (Import)	20 kg capacity 1 gr sensitivity



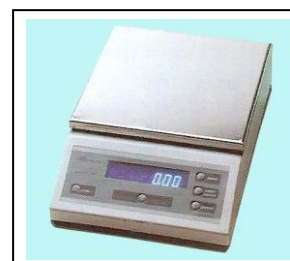
PLATFORM SCALE

50007/1	Platform Scale	30 kg capacity 5 gr sensitivity
50007/2	Platform Scale	60 kg capacity 10 gr sensitivity
50007/3	Platform Scale	150 kg capacity 20 gr sensitivity
50007/4	Platform Scale	300 kg capacity 50 gr sensitivity
50007/5	Platform Scale	600 kg capacity 100 gr sensitivity



DIGITAL BALANCE

50008/1	Digital Balance	200 gr capacity 0.01 mg sensitivity
50008/2	Digital Balance	600 gr capacity 0.01 gr sensitivity
50008/3	Digital Balance	2000 gr capacity 0.1 gr sensitivity
50008/4	Digital Balance	6100 gr capacity 0.1 gr sensitivity



DRYING OVEN

50009/1	Drying Oven	14 ltr capacity, 220 volt – 600 watt
50009/2	Drying Oven	32 ltr capacity, 220 volt – 1100 watt
50009/3	Drying Oven	39 ltr capacity, 220 volt – 1200 watt
50009/4	Drying Oven	53 ltr capacity, 220 volt – 1400 watt
50009/5	Drying Oven	108 ltr capacity, 220 volt – 1600 watt
50009/6	Drying Oven	256 ltr capacity, 220 volt – 2400 watt
50009/7	Drying Oven	416 ltr capacity, 220 volt – 4000 watt
50009/8	Drying Oven	749 ltr capacity, 220 volt – 4800 watt



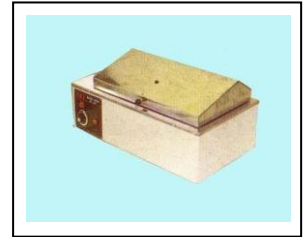
HOT PLATE

50010/1	Hot Plate	Single Burner, 220 volt – 1500 watt
50010/2	Hot Plate	Double Burner, 220 volt – 1500 + 750 watt



WATER BATH

50011/1	Water Bath	12 ltr capacity, temperature range From room temperature to 70° C
50011/2	Water Bath	24 ltr capacity, temperature range From room temperature to 70° C



LPG TUBE

50012/1	Butane Field Heater	3 kg capacity, with regulator
50012/2	Khitcen LPG Tube	45 kg capacity, with regulator



BUNSEN BURNER

50013/1	Bunsen Burner	Brass type, burner adjusment
50013/2	Bunsen Burner	Stainless type, burner adjusment



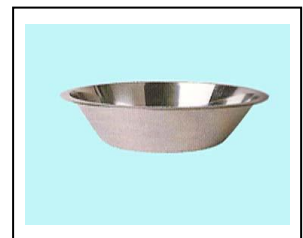
SQUARE PAN

50014/1	Square Pan	Dimension 25 x 25 x 5 cm
50014/2	Square Pan	Dimension 40 x 40 x 5 cm
50014/3	Square Pan	Dimension 50 x 50 x 7.5 cm
50014/4	Square Pan	Dimension 65 x 65 x 7.5 cm



ALUMUNIUM ROUND PAN

50015/1	Round Pan	15 cm diameter
50015/2	Round Pan	20 cm diameter
50015/3	Round Pan	25 cm diameter



STAINLESS MIXING BOWL

50016/1	Mixing Bowl	10 cm diameter
50016/2	Mixing Bowl	15 cm diameter
50016/3	Mixing Bowl	20 cm diameter
50016/4	Mixing Bowl	25 cm diameter



THIN BOX

50017/1	Thin Box	60 gr capacity
50017/2	Thin Box	120 gr capacity



GRADUATED CYLINDER Glass Made

50018/1	Graduated Cylinder	25 ml capacity
50018/2	Graduated Cylinder	50 ml capacity
50018/3	Graduated Cylinder	100 ml capacity
50018/4	Graduated Cylinder	250 ml capacity
50018/5	Graduated Cylinder	500 ml capacity
50018/6	Graduated Cylinder	1000 ml capacity



GRADUATED CYLINDER Plastic Made

50019/1	Graduated Cylinder	25 ml capacity
50019/2	Graduated Cylinder	50 ml capacity
50019/3	Graduated Cylinder	100 ml capacity
50019/4	Graduated Cylinder	250 ml capacity
50019/5	Graduated Cylinder	500 ml capacity
50019/6	Graduated Cylinder	1000 ml capacity



VOLUMETRIC FLASK

50020/1	Volumetric Flask	100 ml capacity
50020/2	Volumetric Flask	250 ml capacity
50020/3	Volumetric Flask	500 ml capacity
50020/4	Volumetric Flask	1000 ml capacity



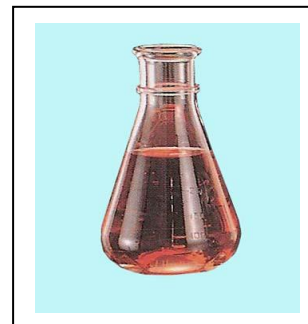
BEAKER GLASS

50021/1	Beaker Glass	100 ml capacity
50021/2	Beaker Glass	250 ml capacity
50021/3	Beaker Glass	500 ml capacity
50021/4	Beaker Glass	1000 ml capacity



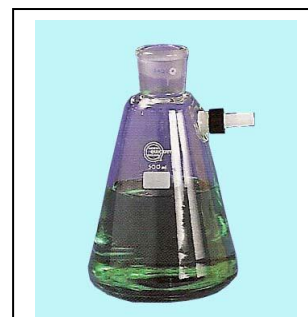
ERLENMEYER FLASK

50022/1	Erlenmeyer Flask	125 ml capacity
50022/2	Erlenmeyer Flask	250 ml capacity
50022/3	Erlenmeyer Flask	500 ml capacity
50022/4	Erlenmeyer Flask	1000 ml capacity
50022/5	Erlenmeyer Flask	2000 ml capacity



VACUUM FLASK

50023/1	Vacuum Flask	125 ml capacity
50023/2	Vacuum Flask	250 ml capacity
50023/3	Vacuum Flask	500 ml capacity
50023/4	Vacuum Flask	1000 ml capacity
50023/5	Vacuum Flask	2000 ml capacity



DENSITY BOTTLE

50024/1	Density Bottle	50 ml capacity
50024/2	Density Bottle	100 ml capacity



DESSICATOR Non Vacuum

50025/1	Dessicator NV	21 cm diameter
50025/2	Dessicator NV	24 cm diameter
50025/3	Dessicator NV	30 cm diameter

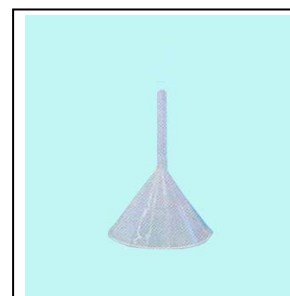


DESSICATOR Vacuum Type

50026/1	Dessicator VT	21 cm diameter
50026/2	Dessicator VT	24 cm diameter
50026/3	Dessicator VT	30 cm diameter

**FUNNEL Glass**

50027/1	Funnel	Glass narrow mouth
50027/2	Funnel	Glass wide mouth

**FUNNEL Plastic**

50028/1	Funnel	Plastic narrow mouth
50028/2	Funnel	Plastic wide mouth

**EVAPORATING DISH**

50029/1	Evaporating Dish	9 cm dia, 100 ml capacity
50029/2	Evaporating Dish	12 cm dia, 250 ml capacity
50029/3	Evaporating Dish	15 cm dia, 350 ml capacity
50029/4	Evaporating Dish	17 cm dia, 500 ml capacity

**MORTAR AND PESTLE**

50030/1	Mortar and Pestle	12 cm diameter
50030/2	Mortar and Pestle	15 cm diameter
50030/3	Mortar and Pestle	18 cm diameter



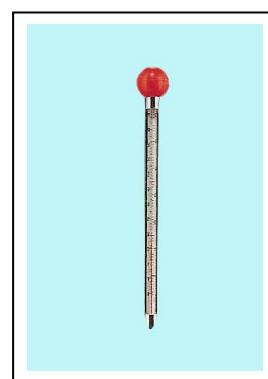
WASH BOTTLE

50031/1	Wash Bottle	125 ml capacity
50031/2	Wash Bottle	250 ml capacity
50031/3	Wash Bottle	500 ml capacity
50031/4	Wash Bottle	1000 ml capacity



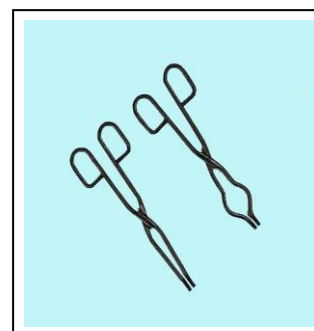
PIPETE

50032/1	Pipete	5 ml capacity
50032/2	Pipete	10 ml capacity
50032/3	Pipete	15 ml capacity



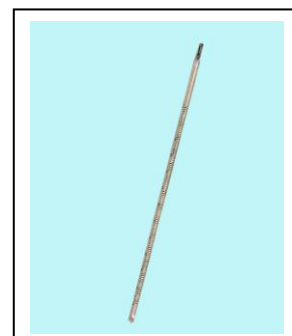
LABORATORY TONG

50033/1	Laboratory Tong	Crucible Type
50033/2	Laboratory Tong	Beaker Type
50033/3	Laboratory Tong	Flask Type



THERMOMETER Glass

50034/1	Thermometer glass	Range 0 - 50 ^o C
50034/2	Thermometer glass	Range 0 - 100 ^o C
50034/3	Thermometer glass	Range 0 - 150 ^o C
50034/4	Thermometer glass	Range 0 - 200 ^o C
50034/5	Thermometer glass	Range 0 - 300 ^o C
50034/6	Thermometer glass	Range 0 - 400 ^o C



POCKET DIAL THERMOMETER

50035/1	Pocket Dial Thermometer	Range 0 - 200 ⁰ C
50035/2	Pocket Dial Thermometer	Range 0 - 300 ⁰ C
50035/3	Pocket Dial Thermometer	Range 0 - 500 ⁰ C



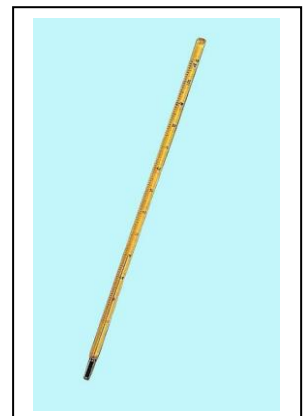
BIMETAL DIAL THERMOMETER

50036/1	Metal Dial Thermometer	Range 0 - 200 ⁰ C
50036/2	Metal Dial Thermometer	Range 0 - 300 ⁰ C
50036/3	Metal Dial Thermometer	Range 0 - 500 ⁰ C



ASTM THERMOMETER

50037/1	ASTM Thermometer	12 ⁰ C. 20 to 102 ⁰ C
50037/2	ASTM Thermometer	12 ⁰ F. 5 to 215 ⁰ F
50037/3	ASTM Thermometer	63 ⁰ C. 8 to 32 ⁰ C
50037/4	ASTM Thermometer	63 ⁰ F. 18 to 89 ⁰ F
50037/5	ASTM Thermometer	13 ⁰ C. 155 to 170 ⁰ C
50037/6	ASTM Thermometer	17 ⁰ C. 19 to 27 ⁰ C
50037/7	ASTM Thermometer	18 ⁰ C. 34 to 42 ⁰ C
50037/8	ASTM Thermometer	19 ⁰ C. 49 to 57 ⁰ C
50037/9	ASTM Thermometer	20 ⁰ C. 57 to 65 ⁰ C
50037/10	ASTM Thermometer	21 ⁰ C. 79 to 87 ⁰ C
50037/11	ASTM Thermometer	22 ⁰ C. 95 to 103 ⁰ C
50037/12	ASTM Thermometer	17 ⁰ F. 66 to 80 ⁰ F
50037/13	ASTM Thermometer	18 ⁰ F. 34 to 42 ⁰ C
50037/14	ASTM Thermometer	19 ⁰ F. 120 to 134 ⁰ F
50037/15	ASTM Thermometer	20 ⁰ F. 134 to 148 ⁰ F
50037/16	ASTM Thermometer	21 ⁰ F. 174 to 188 ⁰ F
50037/17	ASTM Thermometer	22 ⁰ F. 204 to 218 ⁰ F
50037/18	ASTM Thermometer	15 ⁰ C. 2 to 80 ⁰ C
50037/19	ASTM Thermometer	16 ⁰ C. 30 to 200 ⁰ C
50037/20	ASTM Thermometer	113 ⁰ C. 1 to 175 ⁰ C
50037/21	ASTM Thermometer	15 ⁰ F. 30 to 180 ⁰ F
50037/22	ASTM Thermometer	16 ⁰ F. 85 to 392 ⁰ F
50037/23	ASTM Thermometer	113 ⁰ C. 30 to 350 ⁰ F
50037/24	ASTM Thermometer	47 ⁰ C. 586 to 614 ⁰ C
50037/25	ASTM Thermometer	110 ⁰ C. 133.6 to 136.4 ⁰ C
50037/26	ASTM Thermometer	11 ⁰ C. 6 to 400 ⁰ C
50037/27	ASTM Thermometer	11 ⁰ F. 20 to 760 ⁰ F
50037/28	ASTM Thermometer	7 ⁰ C. 2 to 300 ⁰ C
50037/29	ASTM Thermometer	8 ⁰ C. 2 to 400 ⁰ C
50037/30	ASTM Thermometer	7 ⁰ F. 30 to 580 ⁰ F
50037/31	ASTM Thermometer	8 ⁰ C. 30 to 780 ⁰ F



MANOMETER

50038/1	Manometer	25 kg/cm ² cap, 6" dia
50038/2	Manometer	60 kg/cm ² cap, 6" dia
50038/3	Manometer	150 kg/cm ² cap, 6" dia
50038/4	Manometer	250 kg/cm ² cap, 6" dia
50038/5	Manometer	300 kg/cm ² cap, 6" dia
50038/6	Manometer	600 kg/cm ² cap, 6" dia
50038/7	Manometer	700 kg/cm ² cap, 6" dia
50038/8	Manometer	1000 kg/cm ² cap, 6" dia



HYDRAULIC CYLINDER

50039/1	Hydraulic Cylinder	30 Ton cap. 90 mm ram dia
50039/2	Hydraulic Cylinder	50 Ton cap. 150 mm ram dia
50039/3	Hydraulic Cylinder	100 Ton cap. 160 mm ram dia
50039/4	Hydraulic Cylinder	150 Ton cap. 180 mm ram dia
50039/5	Hydraulic Cylinder	200 Ton cap. 200 mm ram dia



HYDRAULIC HAND PUMP

50040/1	Hydraulic Hand Pump	10.000 psi. single action
50040/2	Hydraulic Hand Pump	10.000 psi. double action



HYDRAULIC ELECTRIC PUMP

50041/1	Hydraulic Electric Pump	10.000 psi. single action
50041/2	Hydraulic Electric Pump	10.000 psi. double action



HYDRAULIC HOSE

50042/1	Hydraulic Hose	30 cm length. 10.000 psi
50042/2	Hydraulic Hose	120 cm length. 10.000 psi
50042/3	Hydraulic Hose	180 cm length. 10.000 psi



VACUUM PUMP

50043/1 Vacuum Pump Rotary type, 220 V-AC ¼ HP
1 phase for creating vacuum



STOP WATCH

50044/1 Stop Watch 60 sec sweep x 30 min
50044/2 Stop Watch 30 sec sweep x 10 min



VERNIER CALIPER

50045/1 Vernier Caliper 6" capacity
50045/2 Vernier Caliper 8" capacity
50045/3 Vernier Caliper 10" capacity
50045/4 Vernier Caliper 12" capacity



DIGITAL VERNIER CALIPER

50045.A.1 Vernier Caliper 6" capacity
50045.A.2 Vernier Caliper 8" capacity
50045.A.3 Vernier Caliper 10" capacity
50045.A.4 Vernier Caliper 12" capacity



RUBBER GLOVE

50046/1 Rubber Glove Rubber material, water proof



LEATHER GLOVE

50046/2 Leather Glove

Leather material, for general purpose

**ASBESTOS GLOVE**

50046/3 Asbestos Glove

Asbestos material, for heat resistance

**ROUND SCOOP**

50047/1 Round Scoop

Small size

50047/2 Round Scoop

Large size

**FLAT SCOOP**

50047/3 Flat Scoop

Small size

50047/4 Flat Scoop

Large size

**PAN SCOOP**

50047/5 Pan Scoop

Galvanized metal flat, flat botton, with handle



AGGRERATE SCOOP

50047/6 Agregate Scoop Woodle handle, stainless steel stell blade



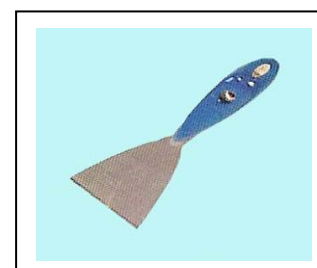
SPATULA

50048/1 Spatula Plastic handle. Stainless steel blade
50048/2 Spatula Wooden handle. Stainless steel blade



SCRAPER

50049/1 Scraper Plastic handle. Stainless steel blade
50049/2 Scraper Wooden handle. Stainless steel blade



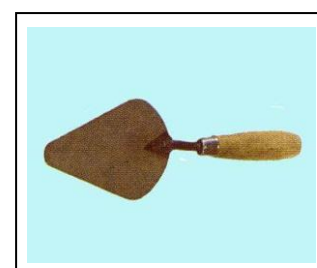
SPOON

50050/1 Spoon Small size
50050/2 Spoon Large size



TROWEL

50051/1 Trowel Wooden handle, pointed type
50051/2 Trowel Wooden handle, round type
50051/3 Gardener Trowel Wooden handle



CHISEL

50052/1	Chisel	30 cm length approx.
50052/2	Chisel	40 cm length approx.



STRAIGHT EDGE

50053/1	Straight Edge	30 cm length
50053/2	Straight Edge	40 cm length
50053/3	Straight Edge	50 cm length



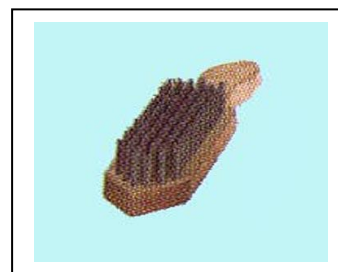
RUBBER MALLET

50054/1	Rubber Mallet	Wooden handle 0.5 kg weight
50054/2	Rubber Mallet	Wooden handle 1 kg weight



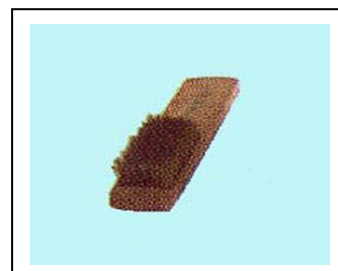
STEEL WIRE BRUSH

50055/1	Steel Wire Brush	Field / Laboratory apparatus
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BRASS WIRE BRUSH

50055/2	Brass Wire Brush	Field / Laboratory apparatus
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SOFT BRUSH

50055/3 Soft Brush Black hair, round type



MORTAR MIXER

50056/1 Mortar Mixer 4.7 ltr cap. Branch model, electric 220 V-AC
50056/2 Mortar Mixer 9.4 ltr cap. Branch model, electric 220 V-AC



ASBESTOS WIRE GAUZE

50057/1 Asbestos Wire Gauze Asbestos Wire, 10 x 10 cm
50057/2 Asbestos Wire Gauze Asbestos Wire, 15 x 15 cm



WIRE SAW

50058/1 Wire Saw For preparing soil sample



PIPE WRENCH

50059/1 Pipe Wrench 8 inch length
50059/2 Pipe Wrench 12 inch length
50059/3 Pipe Wrench 18 inch length
50059/4 Pipe Wrench 24 inch length



SOIL STANDARD COLOUR BOOK

50060/1 Soil Standard Colour Book ASTM Standard



ROLL METER

50061/1 Roll Meter 10 mtr length
 50061/2 Roll Meter 25 mtr length
 50061/3 Roll Meter 50 mtr length



GLASS PLATE

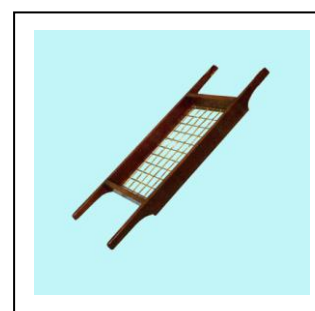
50062/1 Glass Plate 10 x 10 cm square, 1 cm thick
 50062/2 Glass Plate 15 x 15 cm square, 1 cm thick
 50062/3 Glass Plate 20 x 20 cm square, 1 cm thick
 50061/4 Glass Plate 25 x 25 cm square, 1 cm thick
 50062/5 Glass Plate 30 x 30 cm square, 1 cm thick



WOODEN SIEVE

For determining grain size distribution of soil particle or sand/gravel wooden frame.

50063/1	Wooden Sieve 4"	Mesh 101.6 mm
50063/2	Wooden Sieve 3 1/2"	Mesh 88.9 mm
50063/3	Wooden Sieve 3"	Mesh 76.2 mm
50063/4	Wooden Sieve 2 1/2"	Mesh 62.5 mm
50063/5	Wooden Sieve 2"	Mesh 50.8 mm
50063/6	Wooden Sieve 1 3/4"	Mesh 44.4 mm
50063/7	Wooden Sieve 1 1/2"	Mesh 38.1 mm
50063/8	Wooden Sieve 1 1/4"	Mesh 31.7 mm
50063/9	Wooden Sieve 1"	Mesh 25.4 mm
50063/10	Wooden Sieve 7/8"	Mesh 22.2 mm
50063/11	Wooden Sieve 3/4"	Mesh 19.0 mm
50063/12	Wooden Sieve 5/8"	Mesh 15.86 mm
50063/13	Wooden Sieve 1/2"	Mesh 12.7 mm
50063/14	Wooden Sieve 7/16"	Mesh 11.1 mm
50063/15	Wooden Sieve 3/8"	Mesh 9.7 mm
50063/16	Wooden Sieve 5/16"	Mesh 7.9 mm
50063/17	Wooden Sieve 1/4"	Mesh 6.3 mm
50063/18	Wooden Sieve #4'	Mesh 4.75 mm



ROUND SIEVES 8" DIAMETER

Particle size analysis is probably performed in most if not all laboratories engineering application. The test is generally used to classify a material prior to performing other test relative to its end use.



Number	English	Metric	Number	English	Metric
50064.1	4.25 inchi	106 mm	50064.24	No. 12	1.70 mm
50064.2	4.00 inchi	100 mm	50064.25	No. 14	1.40 mm
50064.3	3 1/2 inchi	90 mm	50064.26	No. 16	1.18 mm
50064.4	3 inchi	75 mm	50064.27	No. 18	1.00 mm
50064.5	2 1/2 inchi	63 mm	50064.28	No. 20	850 mm
50064.6	2 inchi	50 mm	50064.29	No. 25	710 mm
50064.7	1 3/4 inchi	45 mm	50064.30	No. 35	500 mm
50064.8	1 1/2 inchi	37.5 mm	50064.31	No. 40	425 mm
50064.9	1 1/4 inchi	31.5 mm	50064.32	No. 45	355 mm
50064.10	1 inchi	25 mm	50064.33	No. 50	300 mm
50064.11	7/8 inchi	106 mm	50064.34	No. 60	250 mm
50064.12	3/4 inchi	19 mm	50064.35	No. 70	212 mm
50064.13	5/8 inchi	16 mm	50064.36	No. 80	180 mm
50064.14	1/2 inchi	12.5 mm	50064.37	No. 100	150 mm
50064.15	3/8 inchi	9.5 mm	50064.38	No. 120	125 mm
50064.16	5/16 inchi	8.0 mm	50064.39	No. 140	106 mm
50064.17	1/4 inchi	6.3 mm	50064.40	No. 170	90 mm
50064.18	No. 4	4.75 mm	50064.41	No. 200	75 mm
50064.19	No. 5	4.0 mm	50064.42	No. 230	63 mm
50064.20	No. 6	3.35 mm	50064.43	No. 270	53 mm
50064.21	No. 7	2.80 mm	50064.44	No. 325	45 mm
50064.22	No. 8	2.36 mm	50064.45	No. 400	38 mm
50064.23	No. 10	2.00 mm	50064.46	Pan & cover	

50065 MANUAL SIEVE SHAKER

Hand operated sieve shaker, steel box, coast aluminium, 8" sieve diameter with timer and voltage control.



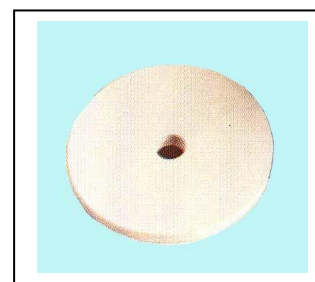
50065.E ELECTRIC SIEVE SHAKER

Electric sieve shaker, steel box, coast aluminium, 8" sieve diameter with timer and voltage control.



FILTER PAPER

50066/1	Filter Paper for centrifuge 50 pcs	1 box
50066/2	Filter Paper for reflux 50 pcs	1 box
50066/3	Filter Paper for soil sample mould 100 pcs	1 box
50066/4	Filter Paper 50 x 50 cm	1 pcs



CHEMICAL

50067/1	Hydrochloric Acid	1000 ml
50067/2	Hydrofluoridric Acid	1000 ml
50067/3	Nitric Acid	1000 ml
50067/4	Sulfuric Acid	1000 ml
50067/5	Distilled Water	1000 ml
50067/6	Hydrogen Peroxide	1000 ml
50067/7	Ferric Alum, Indicator Solution	1000 gr
50067/8	Ammonia	1000 gr
50067/9	Ammonia Carbonate	1000 gr
50067/10	Anhydride Phosphoric	500 gr
50067/11	Silver Nitrate 10 N	1000 ml
50067/12	Barium Chloride	1000 gr
50067/13	Calcium Chloride	1000 gr
50067/14	Silica Gel	1000 gr
50067/15	Glycerin	1000 ml
50067/16	Mercury (Pure)	1000 gr
50067/17	Vaseline Oil	1000 ml
50067/18	Paraffin Wax	1000 gr
50067/19	Potassium Bichormate	1000 gr
50067/20	Sodium Carbonate	1000 gr
50067/21	Sodium Chloride	1000 gr
50067/22	Sodium Hexametaphosphate	1000 gr
50067/23	Sodium Hydroxide	1000 gr
50067/24	Sodium Sulfate	1000 gr
50067/25	Trichloroethylene	40 gr
50067/26	Zinc Chloride	1000 gr
50067/27	Blue of Methylene	100 gr
50067/28	Kaolinite	500 gr
50067/29	Ion Exchange Resin	500 gr



OSBORN REYNOLD

Specifications :

Material Tubes : Fiberglass Tube 0.4 and 0.5 mm.

Material Table Tube : Iron Plate 0.3 mm.

Tube Dimension : Ø Diameter 30 cm, Height 35 cm

Table Tube Dimensions : Ø Upper diameter 40 cm, - Ø Bottom diameter : 70 cm

Complete :

Kacan Balls : 1 set.

Ink : 1 bottle 300 gr

Specifications:

Dimensions (Bottom water) below:

Length 90 cm.

Width 60 cm.

Upper water dimension:

Length 100 cm.

70cm wide.

Height (Water bath) 100 cm.

Material (Water Bath) Outside: Iron Elbow and 0.5mm Fiberglass Plate.

Materials (Water Bath) Inside: Iron Elbow and 0.5 mm Fiberglass Plate.

Overall Closing Material: 0.5 mm Fiberglass Plate.

Pump: Centrifugal Water Pump Type.

Complete:

Weighing load balancer: 3 pieces.

HYDRAULIC BENCH

ORIFICE DISCHARGE

Specifications:

Material Tube: Fiberglass 0.3 mm.

Foot and Frame Material: Iron pipe.

Dimensions: Ø Diameter 15 cm, Height 40 cm

JARINGAN PIPA

Specifications :

Dimensions :

Length : 300 cm.

Width : 150 cm.

Channel Pipes: Copper and elastic Hose.

DRAINAGE AND SEEPAGE TANK

Specifications:

Material Tube: Fiberglass 0.3 mm.

Foot and Frame Material: Iron pipe.

Dimensions: Ø Diameter 15 cm, Height 40 cm

FLUME TEST**Specifications:**

Total length (channel of water): 500 cm.

Width (water channel): 10 cm.

High (water channel): 20 cm.

Frame (drains): Iron and Iron Plate.

Material (drains): 0.8 cm Fiberglass Plate.

Material Tub (drains): Iron Frame and 0.5 cm of Fiberglass Plate.

Water Container Material: Iron Frame and Fiberglass Plate.

Pump: Centrifugal Water Pump Type.

Completeness:

Water reservoir: 1 piece.

Meter level: 1 piece.

Doors :

Sharp: 1 piece.

Square: 1 piece.

Spherical: 1 piece.

Threshold:

Width: 1 piece.

Rectangle: 1 piece.

2 rounded edges: 1 piece.

1 side round: 1 piece.

Sharp: 1 piece.

IMPACT OF A JET**Specifications:**

Material Tube: Fiberglass 0.3 mm.

Foot and frame material: Iron Pipe.

Dimensions: Ø Diameter 15 cm, Height 40 cm.

Jet diameter: 0.8 cm.

Complete :**Testing Targets:**

Field ½ Circle: 1 piece.

Flat Field: 1 piece.

Expenses:

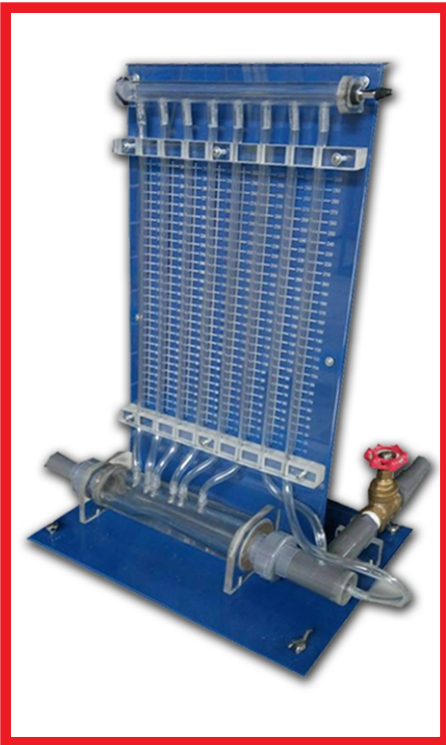
Load 5 grams: 1 piece.

Load 10 grams: 1 fruit.

Load 50 grams: 1 piece.

Load 100 grams: 1 piece.

BERNOULLI'S



Specifications:

Table Material: Iron Plate.

Measure Material: Fiberglass Plate. Specifications:

Table Material: Iron Plate.

Measure Material: Fiberglass Plate.

Flowmeter: Fiberglass.

Pipe: Elastic hose.

8 Water manometer hole.

VENTURI METER



Specifications:

Table Material: Iron Plate.

Measure Material: Fiberglass Plate.

Flowmeter: Fiberglass.

Pipe: Elastic hose.

11 Water manometer hole

FLOW METER

Application:

Application :

Measure rivers flows

Irrigation canals

Ocean flows

Air conditioning conduits

Sewage flows

Ventilation shafts

Hydrological studies

Aerological studies

Chimney flues

FLOW SPEED MEASUREMENT :

Units : km/ h, mph, knots, m/ s and cm/ s

Accuracy : + / 5% from -10 to + 50 C

Measuring range : 2 to 150 km/ h

Accessories : sold with a cap to protect the impeller

Temperature :

Units : F and windchill

Accuracy : + / 1 C

Functions : Current, minimum, average, maximum temperature and windchill factor .

Supply Complete with :

Air impeller Ø 20 mm, hole diameter Ø 33 mm (included in the kit)

Air impeller Ø 12 mm, hole diameter Ø 18 mm

Water impeller Ø 60 mm (included in the kit)

Hanging velocity water current sensor with a 15 meters cable, water impeller incorporated



Quotation

Please send me a quotation for our product

Please post, or E-mail :

CV. DIAN ANUGERAH

Head Office :

Jl. Kelapa Puyuh V Blok KB No. 11
Kelapa Gading Timur - Jakarta Utara 14520
Telp. : 021 4520439

Branch Office :

Perum. Janna Land I, Jl. Borong Raya Blok A No. 13
Makassar, Sulawesi Selatan, Tel/Fax: (0411) 494920

Phone : 085215677077 / 087880803924
E-mail : frisman.ramli@diananugerah.com