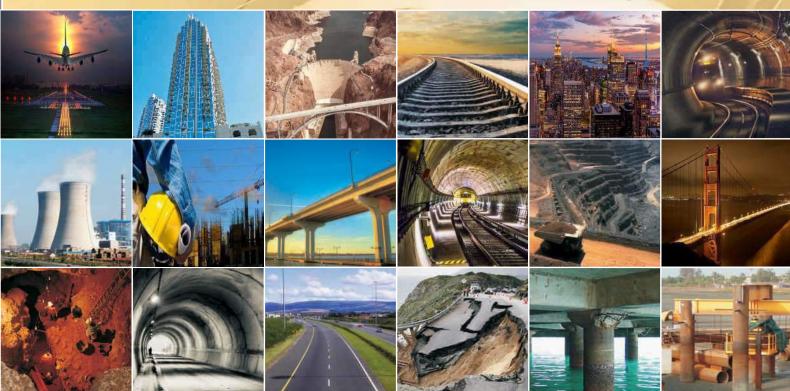


Civil Engineering Systems and Solutions

Aimil Exports Profile



Aimil

Civil Engineering Testing Equipment - Soil | Rock | Geotextile | Concrete | Cement | Sand | Asphalt | Hydraulic | Material

Company Profile

Aimil Ltd. is a pioneer Instrumentation Company in India. We have built our presence in the Instrumentation domain in the Indian market, since our inception in 1932. We are multi-faceted, multi-function, Quality driven organization focussed on customer needs which continuously explores the frontiers of technology and delivers qualuty state-of-the-art products and services.

Our Mission

"To provide optimal Quality and Customer Service by innovation and integration of leading edge global technologies."

Our Core Values:

Core Values are the essential and enduring principles of Aimil that are integral to our success todate. These are:

- Continuous Improvement and Pursuit of Excellence
- Respect for Individuals
- Learning and Self Improvement
- Credibility and Integrit

Quality Policy:

"We will meet our Customer Requirement of Quality and Delivery through a continual review and improvement of our processes."

NAIMEX Noida (Aimil Manufacturing)

Low cost manufacturing location with duty exemptions

- Our location in the Special Economic Zone, Noida UP as a 100% Export Oriented Unit means that we are exempt from paying any import duties, VAT on our raw materials and components used in manufacturing, this makes us extremely competitive on price.

Sizeable property with quick ramp up times for additional orders

- The property stretches over an acre of land of which the shop floor occupies 17,000 square feet with full epoxy coating to provide a clean environment.

- We have built up area over 3 floors giving us ample space for rapid expansion.

Quality Assurance

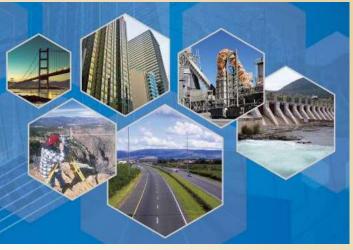
- We test in-house all the products that leave the facility.

 We have 50+ highly skilled engineers and technical supervisors who have been trained in various areas such as Lean Manufacturing & ISO Internal audits, making us highly efficient..









List of Equipment manufactured by Aimil

Soil Testing Range

Automatic Free Fall Hammer **Sample Preparation Moisture Content** Liquid Limit Soil Penetrometer Shrinkage Limit Specific Gravity Particle Size Analysis Load Frames Edilab True Speed Frames Integral Proving Rings Shear Strength **Triaxial Shear** Pore Pressure Lateral Pressure Assembly **Constant Pressure Systems** Automatic Volume Change Gauge Triaxial Electronics Conversion Kit **Triaxial Test Outfits De-Aired Water Apparatus** Edilab Data Acquisition cum Datalogging System Geotechnical Software Software for Testing, Analysis and Reporting of Soil Tests **Direct Shear** Vane Shear Compaction **Relative Density** California Bearing Ratio Consolidation Permeability Swell Pressure Standard Penetration **Dynamic Cone Penetration** Static Cone Penetration **Field Vane Shear Deformation Modulus** Field California Bearing Ratio Plate Bearing Test Load Truss In-situ Density

Rock Testing Range

Sample Preparation Rock Permeability Strength Index Triaxial Testing of Rocks Unconfined In-Situ Stress Rock Direct Shear

Geotextile Testing Range

Geotextile Test Equipment Hydrodynamic Sieve Test Apparatus Cone Drop Test Apparatus Cross Permeability Test Apparatus In-Plane Permeability Test Apparatus Long Term Flow Test Apparatus Gradient Ratio Test Apparatus Geotextile Permeameter Large Pull Out Test Apparatus for Geo Synthetics

Concrete Testing Range

Compressive Strength **Analogue Compression Testing Machines** Portable Compression Testing Machine **Digital Compression Testing Machines** Micro Controller Based Compression Testing Machine Automatic Compression Testing Machine Servo Controlled Compression Testing Machine Touchscreen Based Enhanced Digital Indicator **Flexural Strength** Flexural and Transverse Testing Machines **Rectangular Platens** Split Cylinder Test Platens **Conversion Kits Online Solutions Refurbish Services** Consistency and Workability Self Consolidating Concrete (SCC) Flowability **Consistency Test** Flow Test **Compaction Factor** Setting Time by Penetration Resistance Air Entrainment **Mixing Equipment** Moulding Curing Vibratory Hammer of Concrete Moulds Capping Creep Test Rig **Buoyancy Balance** Vibratory Compaction Sample Collection Tests on Hardened Concrete Modulus of Elasticity Drying, Shrinkage and Moisture Movement Permeability Abrasion Resistance of Concrete **Concrete Test Hammers** Hydraulic Jacks Natural Frequency Tester

Cement, Lime Plaster & Mortar Testing Range

Fineness

Automatic Blaine Apparatus Fineness of Fly Ash (Wet Sieving) Consistency and Setting-time **Gillmore Needle Apparatus** Soundness of Cement and Hydrated Lime Flow and Workability of Mortar and Lime Sample Preparation Moulding **Compression Frame Jig Assembly** Flexural Jig Assembly Modulus of Rupture Testing **Cement Tensile Testing Machine** Permeability Crushing & Grinding Jaw Crusher Pulveriser Hydraulic Press Heat of Hydration

Asphalt Quality Control Testing Range

Penetration Saybolt Viscometer Standard Tar Viscometer Edilab Visco 2000 **Engler Viscometer** Marsh Funnel Viscometer Flow Cup Paving Mix Tests, Marshall Stability and Compaction Core Drilling Compaction Softening Point **Binder Extraction** Ductility **Benkelman Beam** Pavement Dynamic Cone Penetrometer Surface Irregularity Asphalt Mixing Wheel Rut Shaper Wheel Rut Tester Skid Resistance Tester Film Stripping Device Asphalt Mixture Theoretical Density Meter Pavement Intensity Test Apparatus Water Proofing Appartus - Hydraulic Asphalt Extraction Apparatus Automatic Trichloroethylene Recycler Asphalt Content Tester Mastic Asphalt Tester **Mobile Laboratories**

Training Programme Aimil Paathshala for Professionals

With an aim to share our experience and expertise in Instrumentation, gained over the years, we are pleased to introduce Aimil Continual Education Programmes (Aimil CEP) for our valued customers and other Professionals working in the field of Civil Engineering

Sand, Aggregate & Fillers Testing Range

In-situ Sampling and Preparation Determination of Flakiness & Elongation Specific Gravity and Water Absorption Bulk Density, Voids and Bulking Mechanical Properties of Aggregates Aggregate Impact Value, Polished Stone Value Abrasion

Material Testing Range

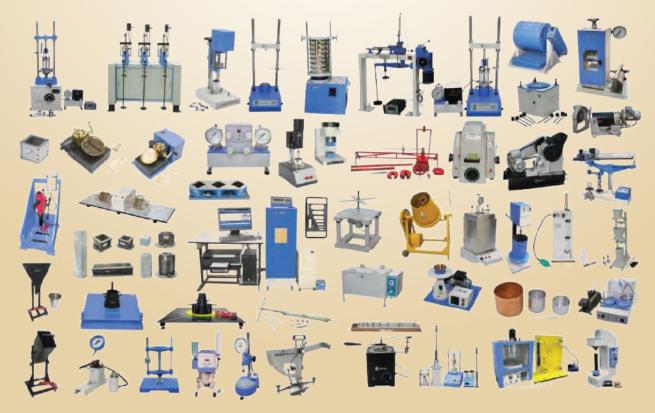
Universal Testing Machine Brinell cum Rockwell Hardness Tester Fatigue Testing Machine Pendulum Impact Tester Torsion Testing Machine Crushing Strength of Iron Ore Pellets Manhole Cover Testing Machine

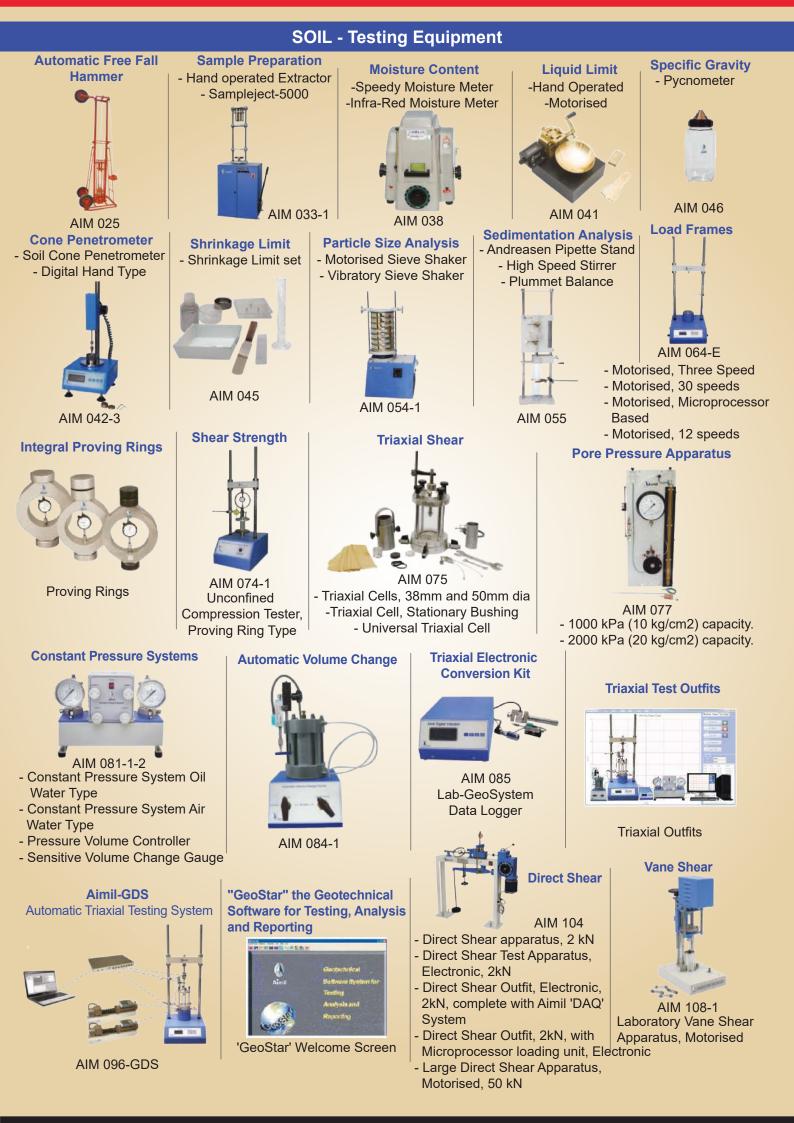
General Laboratory Equipment

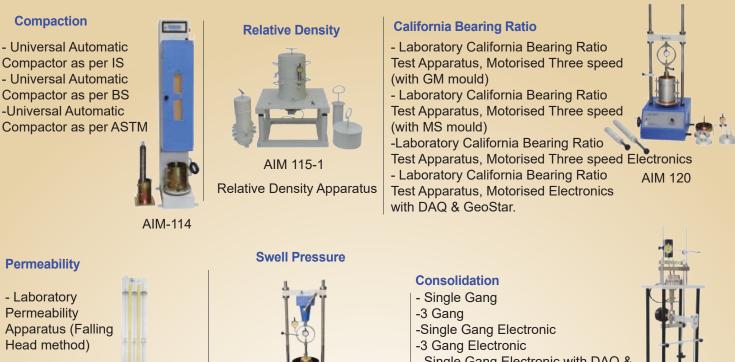
Weighing Balances, Weighing Bottles Drying Ovens Muffle Furnace Water Baths Hot Plates Glass Ware, Evaporating Dish Measuring Cylinders Volumetric Flasks, Funnels Pipettes, Burettes Dessicators Thermometers Humidity Chambers Miscellaneous Tools, Miscellaneous, Others

Courses available for:

Cement Testing, Non Destructive Testing, Civil Engineering Material Testing, Geotechnical Investigations, Geophysical Testing, Evaluation Equipment and Services, Civil Engineering Analysis Software, Surveying, Structural Monitoring Instruments, Data Acquisition Systems, Noise, Vibration, Harshness, Other Skill Building courses.







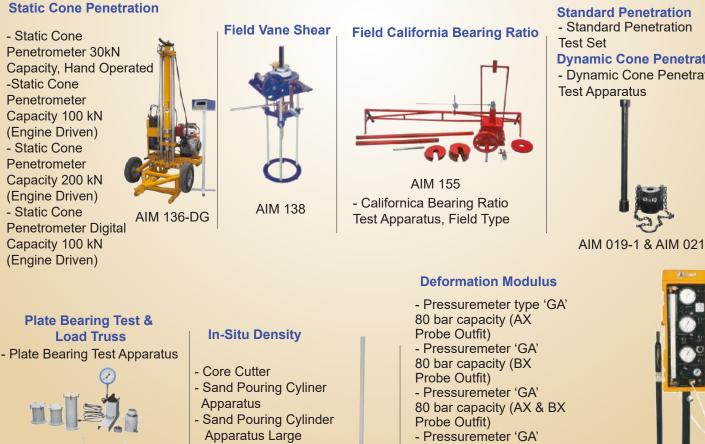
AIM-131

Swell Test Apparatus AIM-132

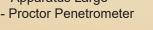
- Single Gang Electronic with DAQ & Software
- 3 Gang Electronic with DAQ &
- Software
- Consolidation Apparatus Automatic with Touchscreen



AIM 125



AIM 157



AIM 161

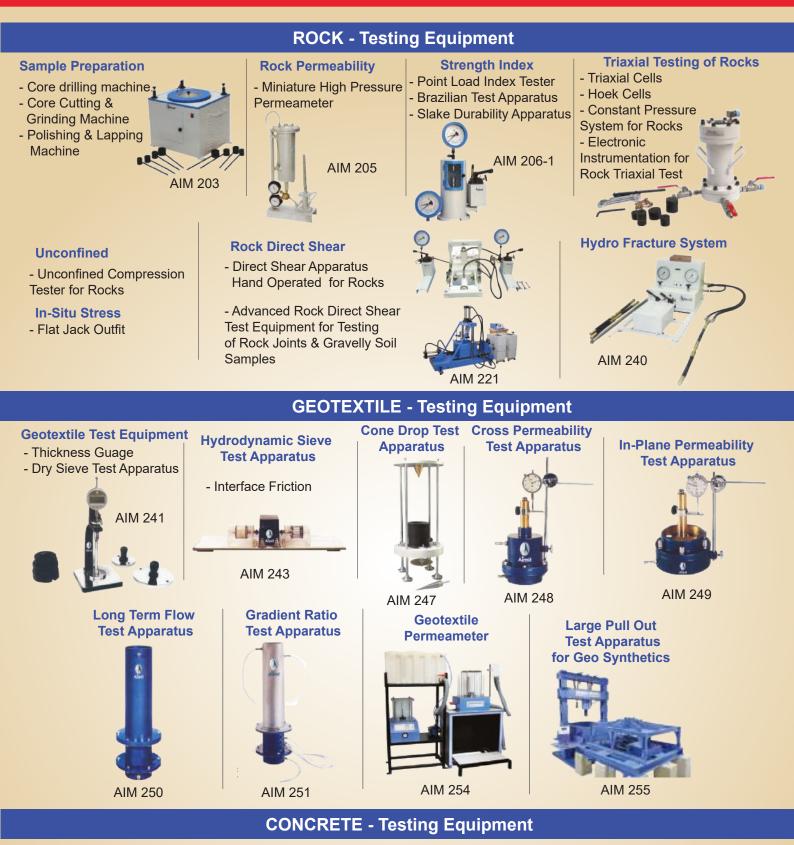
- (AX Probe Outfit, Low capacity) - Pressuremeter 'GA' (BX Probe Outfit, Low capacity)
- Pressuremeter 'GA' 80 bar capacity (NX Probe Outfit) - Pressuremeter 'GA' 25 bar capacity

(NX Probe Outfit)



AIM 141

Standard Penetration - Standard Penetration **Dynamic Cone Penetration** - Dynamic Cone Penetration



Compressive Strength

- Analogue Compression Testing Machine
- Portable Compression Testing Machine
- Digital Compression Testing Machine, Hand Operated.
- Digital Compression Testing Machine
- Micro Controller Based Compression Testing Machine with Automatic Pace Rate Controller
- Automatic Compression Testing Machine
- Portable Compression Testing Machine with Aimil Software
- Touchscreen based Enhanced Digital Indicator (EDI) for Compression Testing Machine
- Compression Testing Machine Electromechanical Type, 50kN Capacity
- Aimil Prime Compression Testing Machine
- Aimil Prime Automatic Compression Testing Machine
- Servo Controlled Compression Testing Machine



AIM 320E-FA-1







- The Flexure Strength Testing Machine



AIM 460



AIM 461



AIM 481

AIM 456



Asphalt Quality Control - Testing Equipment



Core Drilling

- Pavement Core

Drilling

AIM 551-1



AIM 529-1

Flow Cup

AIM 539

AIM 531 **Paving Mix Test, Marshall Stability and Compaction** - Marshall Apparatus

- Modified Marshall Apparatus **50kN Single Speed** - Digi Marshall Apparatus



- Engler Viscometer **Electrical Heating**



AIM 534

Compaction - Automatic Compactor for **Bituminous Mixes** - Bitumen Compactor for Modified Marshall Moulds





AIM 536





AIM 561-1



400kN, 600kN & 1000kN

- Manhole Cover Testing Machine for Iron Pellets

Advanced Technology & Engineering Services

A division of Aimil Ltd. | ISO 9001 (2008)

Advanced Technology and Engineering Services (ATES) is the Consultancy division of Aimil Ltd. The company established in 1932, is an ISO 9001: 2008 Certified Company, well known in India and abroad for manufacturing and sales of Civil Engineering & Scientific instruments. ATES is a multi-disciplinary group of highly qualified professionals, practicing in the areas of Civil, Geology, Earthquake and Mining Engineering.



Design & Analysis :

ATES has a vast experience of executing design and analysis projects of large and specialized civil structures like Concrete & Earthen Dams, Underground Powerhouse Cavern Complexes, Tunnels, Landslide Zones & many more. We have successfully completed some of the challenging & prestigious projects. Our services include :

> Advanced Numerical Analysis of Geotechnical Structures

- 2D & 3D Continuum Analysis of Soil & Rocks
- 2D & 3D Discontinuum Analysis of Jointed Rockmass
- Elastic & Elasto-Plastic Analysis of Soil & Rock
- Seepage Analysis of Geomechanical media
- Thermal Analysis
- Creep Analysis
- Static, Pseudo-Static, Hydro-Static & Hydro-Dynamic Analysis
- Dynamic Analysis

> Tunnel Design & Analysis

- Drill & Blast Tunnels NATM Tunnels TBM Tunnels
- > Foundation Design & Analysis
 - Shallow Foundations
 - Deep Foundations

> Slope Stability Problems

- Natural Slope
- Hill Cut & Fill Slopes
- Earthen/Rock Fill Dams
- Slope Treatment and Mitigation Methods
- Liquefaction Potential Analysis
- Design of Ground Improvement
- i) Mechanical Stabilized Earth Wall Design & Supervision Services
- ii) Grouting
- iii) Soil Nailing and Ground Anchor
- Landslide Hazard Evaluation Studies and Zonation Mapping

Geotechnical Investigations :

ATES, with its in-house capabilities & international collaborators, provides state-of-the-art field & laboratory based services in the area of rock & soil mechanics. ATES innovates, designs and manufactures equipments for in-situ & laboratory based examinations. The division generates highly specialized & qualified geotechnical inputs and provides solutions to challenging issues.







> Field Investigations

ATES has expertise in field studies for rocks & soils like :

- Drilling and Sampling
- Bore Hole Logging
- Field Permeability
- Standard Penetration Test
- Dynamic Cone Penetration Test
- Vane Shear Test
- Pressuremeter Test (Max. capacity 80 bar)
- Dilatometer (Max. capacity 300 bar)
- Plate Load Test
- Modulus of Sub-grade Reaction (K-Value)
- California Bearing Ratio
- Plate Jacking Test inside drift with option for borehole extensometer for multi-point measurement
- Hydrofracture/HTPF Test
- Flat Jack Test for In-situ Stress Measurement
- In-situ Direct Shear Test
- Pull Out Test of grouted rock anchors
- Monitoring of Rock Movements

Laboratory Tests :

ATES has well established in-house laboratory of international standards, equipped with modern and up to date instruments for characterizing physic-mechanical properties of soil, rock and rock joints.

> Soil

- Gradation Analysis
- Atterberg Limit
- Direct Shear Test
- Uniaxial Compressive Test
- Triaxial Compressive Strength Test UU/CU/CD
- Consolidation
- Permeability
- Density
- California Bearing Ratio (CBR)
- Proctor Compaction
- Swell Pressure & Swelling Index

• Determination of total soluble solids, organic matter, calcium carbonate, cation exchange capacity, pH value and total soluble sulphates

> Intact Rock and Rock Joints

- Index Properties
- Uniaxial Compressive Test
- Triaxial Compressive Test
- Modulus of Elasticity And Poisson's Ratio
- Tensile Strength Test
- Point Load Index Test
- Hardness / Toughness Test
- Petrographic Analysis
- Direct Shear Test

> Concrete Technology

- Construction Material Survey (RBM, Query, C.A., F.A. etc)
- Repeated Temperature Cycle Test
- Laboratory Testing of Materials Design of Mortar & Concrete Mixes
- Design of Gunite/Shotcrete/Steel Fiber Reinforced Shotcrete Mixes
- Design of Concrete Mixes and Masonry(Calgrout)
- Tests on Hardened Concrete
- Design of Epoxy Resin/Polyurethane Mortars and Epoxy/Polymer
- Concrete Mixes Temperature Control Studies
- Creep and Shrinkage Characteristics
- Alkali Aggregate Reaction Studies
- · Execution and Supervision of Quality Control
- Design of Roller Compacted Concrete Mixes Setting Up of Field Laboratories











Engineering Geology and Geo-hazards :

ATES provides most scientific and complete solutions/services in the field of Engineering Geology/Geo-hazards. We have in-house experienced team of Engineering Geologists/Geo-Experts, who work closely together with Geophysists/ Geotechnical team to analyze specific Geological problems and develop best suited scientific solutions.

Key geological services are:

- Surface Geological Mapping
- Acquisition of Data from site and their Analysis
- Geological Logging of cores recovered from drill holes
- 3D Geological Logging of Drift/Tunnel/Caverns
- Geo Mapping of Slopes
- Preparation of Detail Project Report that includes all necessary inputs for detailed design

Geophysical Services :

ATES has the privilege of having highly experienced professionals to provide an entire range of geophysical solutions, including investigations and consultancy for a wide range of civil engineering applications with state-of-the-art instrumentation.

ATES provides a wide range of Geophysical Services

> Seismic Surveys

- Bedrock Profiling & Over Burden Thickness
- Fracture, Weak Zone Identifications
- Rippability Studies

> Electrical Surveys

- Soil Resistivity Studies
- Ground Water Investigations
- Land Fill Site Selections

> Seismic Tomography, Crosshole/Downhole

- Determination of Seismic Velocities
- Liquefaction Studies

> Ground Penetrating Radar Surveys

- Buried Utilities
- Geotechnical and Environmental
- Infrastructure Assessment (Bridges, Buildings etc.)
- Tunneling and Underground Cavities

> Traffic Surveys

> Topographic Surveys

Health Monitoring of Civil Structures :

- Non-Destructive Testing
- Pile Integrity Tests
- Vibration Monitoring
- Mapping Defects in Buildings, Bridges and Dams
- Repair & Rehabilitation
- Survey of Archaeological Monuments

Structural Monitoring & Instrumentation :

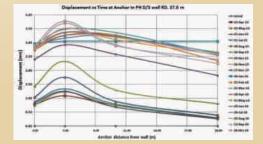
- Planning & Design of Instrumentation Scheme
- Installation & Monitoring
- Data Analysis & Interpretation
- Turnkey Instrumentation Solutions Including Supply
- Web Based Monitoring











Major Projects in India & Abroad

Ground Penetrating Radar Surveys :

• LBSNAA, Mussoorie

- 219 towns of Rajasthan
- Pir Panjal Tunnel T-80
- Durgapur Steel Plant
- Pragati Maidan, New Delhi
- Various Road Junctions in Bangalore
- Various Road Junctions in Chandigarh
- Ta-Prohm Temple, Cambodia
- Parliament House, Delhi
- State Roads of Punjab
- Diesel Locomotive Shed, Roja

Geophysical Surveys :

- Karuma, Uganda, Africa
- Hirong, Arunachal Pradesh
- Lower Siang, Arunachal Pradesh
- Mwache, Kenya
- Yamne Stage –II, Arunachal Pradesh
- Kholongchu, Bhutan
- Wangchhu H.E. Project, Bhutan
- Kishanganga H.E. Project, J&K
- Chanju H.E. Project, Himachal Pradesh
- Ratle H.E. Project, J&K
- Northern Railway, Chandigarh
- Yadadri Thermal Power Station, Telangana

Geotechnical Investigations :

- Budhi Gandaki H.E. Project, Nepal
- Upper Karnali H.E. Project, Nepal
- Kiru & Kwar H.E. Project, J&K
- Radha Soami Samadh, Agra
- Luhri H.E. Project, H.P.
- Hirong H.E. Project, A.P.
- Pakal Dul H.E. Project, J&K
- Sawalkot H.E. Project, J&K
- Kalai I & II H.E. Project, A.P
- Solu H.E. Project, Nepal
- Kuri H.E. Project, Bhutan

Laboratory Investigation :

- Sawalkot H.E. Project, J&K
- Nikachhu H.E. Project, Bhutan
- Dhaula Sidh H.E. Project, H.P.
- Bangalore Metro UG2, Bangalore
- Chango Yangthang H.E. Project, H.P.
- Kantangshiri H.E. Project, A.P.
- Baragaon H.E. Project, H.P.
- Tehri PSP

Numerical Modeling :

- Bajoli Holi H.E. Project, H.P.
- Ratle H.E. Project, J&K
- Sawra-Kuddu H.E. Project, H.P.
- Dagachhu H.E. Project, Bhutan
- Jammu Udhampur section of NH-1A, J&K

Structural Monitoring & Instrumentation Projects :

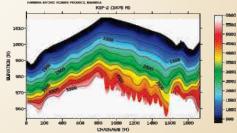
- AMC-Karcham Wangtoo
- Tehri, H.E. Project
- Sainj, Kullu
- DMRC Projects in Delhi
- AHPCL, Uttarakhand
- Landslide Monitoring CBRI Roorkee
- Archeological Site Khooni Darwaza, Delhi

Health Monitoring of Civil Structures :

- · L'oreal Building at Baddi
- Haldiram's Building, Delhi
- British School, Delhi
- NDT at Kopili H.E. Project
- Building Condition Survey DMRC Projects
- NDT at GSFC Jetty & Approach Trestle, Sikka
- Condition Survey & Residual Life Assessment Tar Distillation Plant
- Building Condition Survey-Dubai Metro Greenline
- Crack Mapping for Delhi Metro Airport Line
- Building Condition Survey Jaipur Metro











Geotechnical & Structural Monitoring Instrumentation



Civil Engineering Solutions for Monitoring of.....

Dams & Irrigation Projects

UG Cavern / PS Projects

UG / Elevated Metro Project

Road / Rail Tunneling Projects

Highways & Infrastructure Projects

Landslide / Geo Hazard Projects

Building / Heritage Structures

High Speed Railway Infra Projects

Slopes / Deep Excavations

Piling / Raft Foundation

Bridges / Flyovers

Road Sector Projects

Ports & Harbors

Mining Projects

Hydro / Thermel / Nuclear Power Projects

Research & Educational Institute

Aimil is in-house software development group company. All electronics are developed in our In-house DST accredited R&D Centre



<u>Content</u>

Piezometer

Casagrande Porous Tube Piezometer Open Standpipe Piezometer Vibrating Wire Piezometers Electronic Water Level Indicator

Uplift Pressure Measurement

Uplift Pressure Pipe & Head Assembly Unit Water Seepage Monitoring

Settlements

Base Plate Settlement System Magnetic Settlement Gauge Surface Settlement Point

Pressure Cells

Vibrating Wire Earth/Soil Pressure Cells Vibrating Wire Concrete Pressure Cells Vibrating Wire Shot Crete - Stress Cells

Strain Gauges

Vibrating Wire Surface Mountable Strain Gauges Vibrating Wire Embedment Type Strain Gauge Vibrating Wire Sister Bar Strain Meter

Extensometer

Single & Multipoint Bore Hole Extensometer Trixial Joint Meter – Vibrating Wire Type Vibrating Wire Joint Meter/Crack Meter/Displacement

Load Cells

Vibrating Wire Center Hole Load Cell Temperature Sensors

Digital Inclinometer

Digital Inclinometer System

Inclinometer Casings

In-Place Inclinometer

Pendulums

Normal / Inverted Pendulum

Automatic Pendulum X-Y Co-ordinator

Portable Tiltmeter

Vibrating Wire Type Tilt Meter

Level Recorder / Monitoring Software

Automatic Water Level Recorder (AWLR) / Piezometer

Readout Unit

Digital Readout Unit

Data Logger

Real Time Monitoring Software - ARMS

Geodetic Target

Bi-Reflex Target Reflector Target Prism / Mini Prism Target Mechanical Crack Meter Pavement/Building Settlement Point Tape Extensometer Pull Out Apparatus EL Beam Sensors Automatic Weather Station Cable - Splicing Kit Junction cum Switch Box

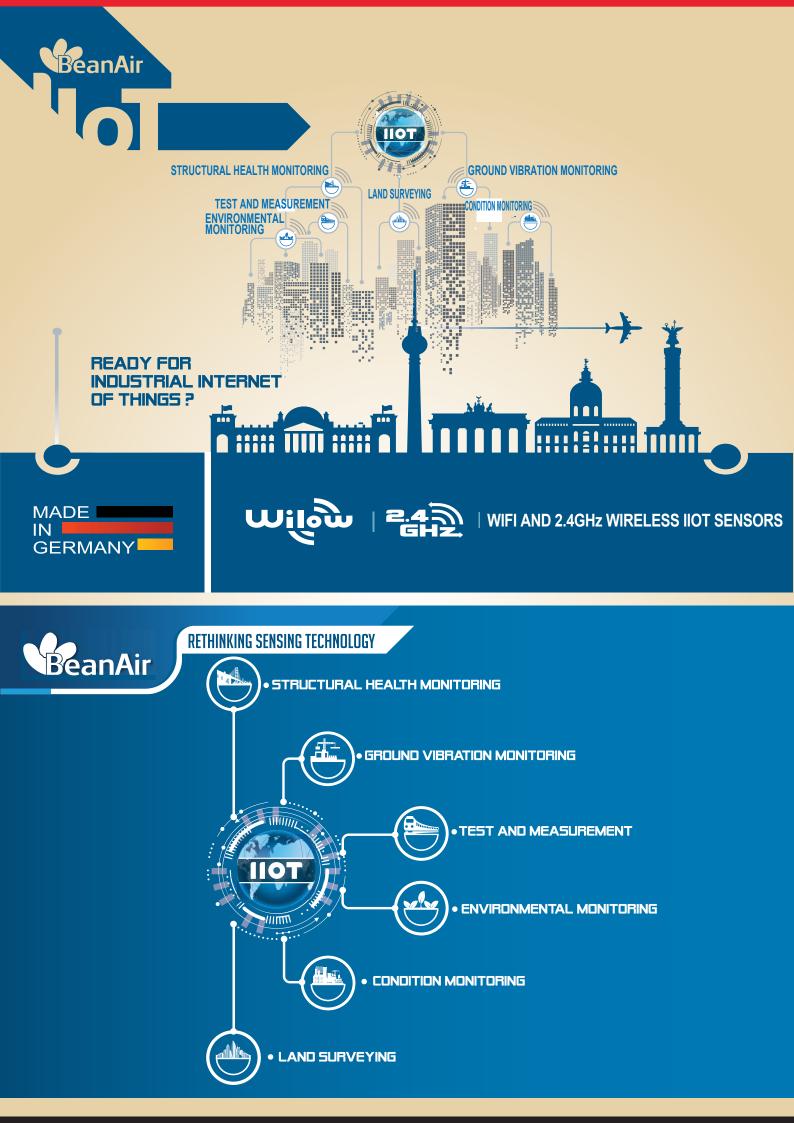
Strong Motion Accelerograph (SMA)

Blast Vibration Recorder

Cables

Note : The following instruments can also be suppled on request.

- 1. V Wire Instrumentated Rock Bolt : 4-6-12 m depth
- 2. V Wire Uniaxial/Biaixial Bore Hole Stress meter (for 38 / 58 mm dia bore holes)
- 3. V Wire liquid settlement cell / measuring systems
- 4. Flat Jack system, can be supplied in different shape / sizes against specific requirement









GROUND VIBRATION MONITORING

Monitoring and control of ground and structural vibrations provide the rational to select measures for prevention or mitigation of vibration problems.

Discover how our wireless vibration sensors can provide a great flexibility in terms of deployment and performances.



ENVIRONMENTAL MONITORING

Beanair provides a wireless IIOT sensors system perfectly adapted to any environmental need:

- Autonomous wireless sensors (ultra low battery consumption
- with an autonomy thancan go up to 7 years) Various information transmission protocols
- Data acquisition and storage device
- Wireless IIOT sensors supervision and monitoring software Monitoring



LAND SURVEYING

Surveying and land surveying is the measurement and mapping of our surrounding environment using mathematics, specialized technology and equipment.

Discover how Beanair provides a field-proven and costeffective wireless IIOT sensors for land surveying.

STRUCTURAL HEALTH MONITORING

The recent developments in sensor technology, especially when wireless technology isconsidered, have opened up new gates in terms of health monitoring and preemptive fault detection.

BeanAir®'s wireless sensor technology offers great reliability, versatility, maintainability and easy to deploy technologyOffer



CONDITION MONITORING

SURVEYINGBeanAir® offers the ideal solution to your needs in terms of measurement and instrumentation to improve equipment energy efficiency and get better knowledge about equipment availability.



TEST AND MEASUREMENT

Offer a True Flexibility to your Testbench !

BeanAir technology offers solutions for rolling stock, naval and aeronautic manufacturer in terms of test and measurement, aiming at reducing costs related to test bench



loadsensing

WORLDSENSING

WIRELESS MONITORING SYSTEM

THE CONNECTED INFRASTRUCTURE SOLUTION MONITORING HOW STRUCTURES EVOLVE

Loadsensing is a data acquisition and monitoring system which combines state-of-the-art wireless monitoring and advanced software tools. It is widely recognized as the leading solution for connecting and monitoring infrastructures inremote locations.

Loadsensing devices are battery-powered and equipped with long-range, low-power wide area network (LPWA) radio communications and are compatible with a wide range of geotechnical sensors. The software suite is web-based and facilitates real-time data capture and analytics. It is also possible to set automatic alarms to make operations safer.

FEATURES

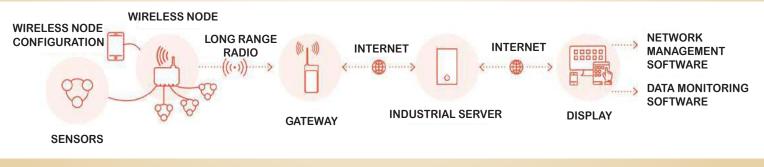
- → Long-range communication of over 9 miles / 15km
- → Truly low-power, 10 years of unattended runtime
- → Wireless LPWA communication
- Supports most structural and geotechnical sensors (vibrating wire, digital, analog)
- \rightarrow Wireless tiltmeter
- → Integrated alarm system
- → User-friendly web software

Mining and construction companies and operators of bridges, tunnels, dams, railways and many other inaccessible assets can now work with reliable data. Having access to this information and real-time insights enables operators to anticipate needs, manage their workforce, diminish risks, and even prevent disasters.

BENEFITS

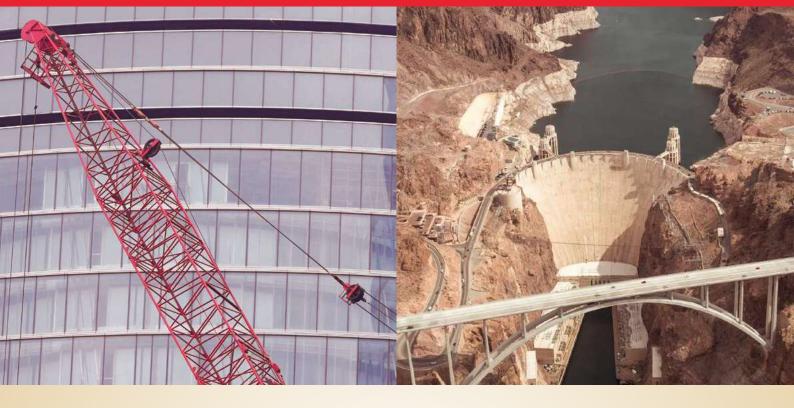
- \rightarrow Leverage already formatted data to optimize operations
- \rightarrow Remotely monitor hard-to-access infrastructures
- \rightarrow Cover a wide area with geotechnical sensors
- → Easily add sensors to extend measurement range
- \rightarrow Save resources through fast implementation
- → Decrease costs through easy maintenance
- Diminish risks and make operations safer

HOW IT WORKS





Operational Intelligence for Mines and Industrial Companies Worldsensing is not only among the best in the world at connecting distributed infrastructures with smart devices, we also know how to extract intelligence from collected data to transform operations. Our software solutions combine location intelligence with infrastructure monitoring.



CONFIGURATION APP

DLOG APP

Simple and fast connection to wireless node

Runs on Android devices

Easy sensor configuration: ID, sampling rate, frequency sweep, interface type, etc

Checks radio signal coverage

Records coordinates (GPS)

Downloads data from wireless node and sends by e-mail or saves it on the Android device

Takes current reading

Updates wireless node firmware



GATEWAY

BASE STATION

ISM Sub 1 GHz band, sensitivity: down to -137 dBm

Detachable omnidirectional ¹/₂ dipole

Integrated GPS antenna

GNSS High Sensitivity GPS module

POWER

Power supply: 48 V DC PoE

Nominal: 3 Watts

DC power supply (ex.: solar panel use): 11 to 30 Volts

MECHANICAL

Size: 210 x 310 x 170 mm, including mounting kit

Weight: 2 kg including mounting kit

IP67 rating

Operating range: -20 to + 60 °C

NETWORK INTERFACES

10/100 Ethernet WAN (RJ45 PoE)

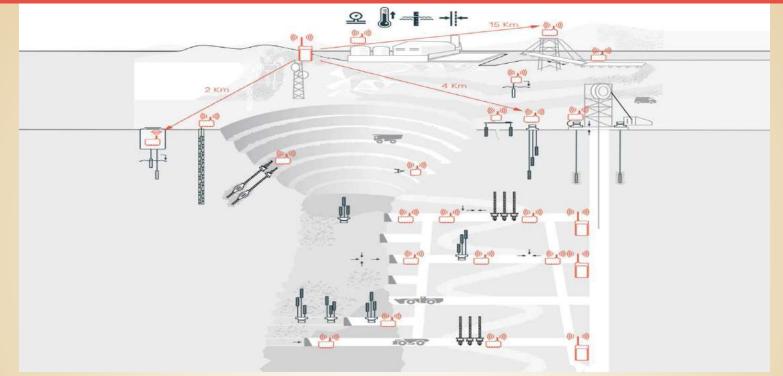
Integrated 3G Modem & Antenna (HSDPA, EDGE, GPRS) quad band

LS gateways: 868 MHz ISM band 915 MHz FCC ISM band 915-928 MHz ISM band

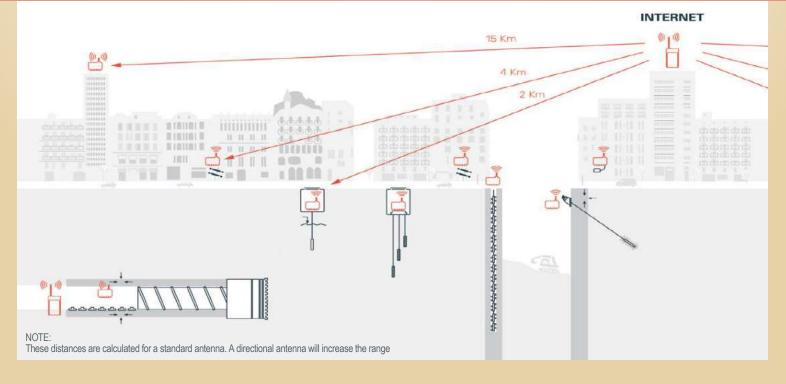




HOW IT WORKS IN MINES



HOW IT WORKS IN CITIES



Advance Civil Engineering & Research Equipments

Advanced Asphalt-Bitumen Engineering Instruments

Equipment	Application
Dynamic Triaxial Testing	Dynamic Triaxial Testing uses either electro mechanical, Systems hydraulic or pneumatic actuation to suit your application in terms of load and frequency.
Universal Testing Machines	To test tensile stress and compressive strength of materials, components and structures.
Hamburg Wheel Tracker	To evaluate the resistance to rutting and moisture susceptibility of asphalt mixtures.
TSRST Apparatus, (Thermal Stress Restrained Specimen Test Equipment)	To determine the low temperature cracking susceptibility of asphalt concrete
Texas Overlay Tester	To simulate the expansion and contraction movements that occur in the vicinity of joints or cracks and which result in reflection cracking in overlays.
Gyratory Compactor	For Asphalt Mix design
Roller Compactor	Dry granulation process used to make coarse granules prior to final compression
Adhesion-Cohesion-Slurry	For adhesion property of aggregates to bitumen and Tester determining the proper consistency (mix design) for a slurry seal mixture
Rolling Thin Film Oven	To measure the effect of heat and air on a moving film of semisolid asphalt binder
AMPT (Asphalt Mixture Performance Testing)	To evaluate asphalt mixture properties to assess potential performance
Nuclear Density Gauges	To provide density and moisture measurements for construction industry and for mining and archaeology.
Moisture Monitoring Probe	To determine Soil Moisture
Rheometer	To measure the way in which a liquid, suspension or slurry flows in response to applied forces
Binder Extraction / Centrifuge Extractors	For determining bitumen percentage in Bitumen paving mixtures
Binder Recovery Equipment	To recover bitumen from a solvent
Marshall Testing Compactors	Automatic compactor for Bituminous Mixes
Asphalt Mixing	Laboratory mixing of Bituminous materials
Pavement Intensity Test Apparatus	To test the compressive strength, indirect intensity test and bearing ratio of soil and pavement material.
Wheel Rut Shaper	Used to prepare the bitumen specimen for wheel rut testing used in research and road construction

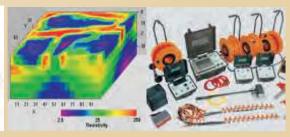
Earth Science Instruments and Software

Geophysical Application Instruments, Earth Resistivity, Electrical Imaging, Exploration Seismographs, Seismic Cross Hole, Uphole, Downhole Seismic, Refraction, Reflection Seismic









Non-Destructive Testing, Utility and Pipeline Testing High-quality portable testing instruments for the non-destructive testing of material properties of metal, concrete, rock, paper and composites.

Concrete Test Hammer

- To measure strength of Concrete or Rock.
- Available in different models, for different impact energies -Original Schmidt, Silver Schmidt, Digi Schmidt

Moisture and Corrosion Analysis

- Investigation of Reinforced Concrete
 Identify / monitor moisture
- in Concrete Measure Electrical Resistivit
- Measure Electrical Resistivity
 of Concrete



Cover Meter, Rebar Detection, Permeability Testing

- Assessment of the concrete cover using a cover meter
- Rebar detection location of rebar's beneath the Concrete surface
- Analysis of the air permeability of the cover concrete by a non destructive method.

Ultrasonic testing of Concrete

- Ultrasonic pulse velocity (UPV) test instrument to examine the quality of concrete and other materials such as rock, wood and ceramics.
- Path length measurement, perpendicular crack depth measurement and surface velocity measurement.



Utility Location

GPR Utility Locator

For locating buried utilities made of metallic and non-metallic materials.



GPR for concrete scanning and Inspection

For inspection of concrete structure such as floors, walls, slabs for detection of metallic and non-metallic objects and features e.g. rebar, cables, metallic and non-metallic conduits and pipes, voids, measurement of slab thickness.



Stand-Alone Seismograph

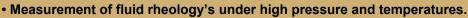
- Designed for all seismic surveys.
- Optimized for near surface geophysics
- Groundwater and salinity studies
- Mineral exploration
- Environmental Investigation
- Geotechnical Surveys

Pipeline Line Inspection

Pipeline Inspection

- Portable crawler system
- Ultra-bright LEDS and high resolution camera
- Fully submersed operation, water resistant
- Cable length from 100m to 250m

Flow and Viscosity



- Cement analysis performs static gel strength tests on cement slurry samples.
- Ultrasonic cement analyzer system Non-destructive method for determining the relative
- strength development of a cement sample under down pole temperature and pressure condition.



Cable and Pipe Locators

- Construction industry
- Water and Pipeline industry
 Dewar Industry
- Power Industry
- Telecom Industry









Civil Engineering Products

Sample Preparation
Core Drilling Equipment
Core and Beam Saws
Thermo-regulated Mixers
Superpave Equipment
Rolling Thin Film Oven
Dynamic Shear Rheometer
Bending Beam Rheometer
Rotational Viscometer
Vacuum Degassing Oven
Pressure Aging Vessel
Thermal Cracking

Texas Overlay Tester Asphalt Pavement Thermal Testing System

Universal Material Testing

Servo-Pneumatic Universal Testing Machine Servo-Hydraulic Universal Testing Machine Servo-Hydraulic Universal Testing Machine-100kN

Wheel Tracking

Dry Wheel Tracker - 1 & 2 arms Auto Lift Arm ECO Wheel Tracker

Two Point Trapezoidal Bending Beam Large Hydraulic Four Point Bending Machine

Bitumen Laboratory Testing

Vialit Cohesion Pendulum

Indentation Testing Machine

Data Acquisition

cDAC

Dimension

Hveem Equipment

Kneading Compactor

Electronic Moisture Exudation Indicators

Soil Mechanics Apparatus

Static Triaxial Testing

Dynamic Triaxial Testing

Shear Testing

Consolidation System

Environmental Temperature Control

Resonant Column

Unsaturated Soil Testing

Hollow Cylinder

Pressure and Volume Controllers

Software

Transducers and Load Cells

Pressure Aging Vessel (PAV4)

Designed to simulate in-service oxidative aging of asphalt binder by exposure to elevated temperatures in a pressurized environment.



Vacuum Degassing Oven (VDO Touch)

Designed to remove air bubbles created during the in-service oxidative aging of asphalt binder by the PAV.



Rolling Thin Film Oven (RTFO)

Introducing Applied Test Systems (ATS) new RTFO! This updated, economical version features a rugged, powdercoated exterior, sealed high temp bearing, and accessible bottom tray for easy cleaning.



Rolling Thin Film Oven (RTFO Touch)

Designed to simulate short-term aging of asphalt binder according to ASTM D2872, AASHTO T240, EN 12607, Superpave, and California Test Method 346 test standards.



Bending Beam Rheometer 2S (BBR2S)

Engineered to perform flexural tests on asphalt binder/ bitumen and similar specimens per ASTM D6648, BS EN 14771, and AASHTO T313.



Bending Beam Rheometer 3 (BBR3)

Designed to perform flexural tests on asphalt binder and similar specimens per AASHTO T 313, AASHTO TP 87, ASTM D6648, and BS EN 14771 specifications as part of the PG grading system according to Superpave.



Structural Pavement Evaluation

Pavement engineers worldwide should have the best tools available to understand and model pavements. The tools can be used to assess pavements under different loading conditions enabling the engineer to identify the correct mode of failure and the optimum maintenance alternative

Light Weight Deflectometer (LWD) Falling Weight Deflectometer (FWD) Fast Falling Weight Deflectometer (FFWD) Heavy Weight Deflectometer (HWD) Truck Mounted Deflectometer (TMD)

Functional Pavement Evaluation

Range of tools for determining the ride and surface quality of the pavements, which can be used for evaluating road or airports.

Road Surface Profilometer (RSP), designed to measure the pavement profile, International Roughness Index (IRI), Ride Number (RN) and rutting of pavements. The functionality of the RSP has been expanded to include the collection of macrotexture, crossfall, gradient and radius of curvature and Right of Way images.

> Road Surface Profiler (RSP MK-III) Road Surface Profiler (RSP MK-IV) Multi Functional Vehicle (MFV)

Pavement Friction Testing

Determining and maintaining acceptable pavement friction condition is highly important to airports and roads authorities. Low friction values may lead to fatal accidents that pavement engineers work diligently to avoid. Pavement engineers worldwide should have the best tools available to understand and model pavements. The tools can be used to assess pavements under different loading conditions enabling the engineer to identify the correct mode of failure and the optimum maintenance alternative

Guideline Geo World leader in Ground Penetrating Radar (GPR) and ABEM MALA geophysical solutions

Guideline Geo is a world-leader in geophysics and geo-technology offering sensors, software, services and support necessary to map and visualize the subsurface.

We provide complete solutions and applications expertise around the globe in four key growth areas: detecting and mapping groundwater, environmental and geological risk assessments, infrastructure site investigations and mineral exploration.

In 2012 Guideline Geo consolidated its two subsidiaries ABEM and MALA to offer unparalleled technical expertise, innovative solutions and world-leading global brands.

Complete Product Range



ABEM Terrameter SAS 1000 The SAS 1000 is a compact resistivity meter designed as a robust solution suitable for applications including groundwater prospecting and IP measurements



ABEM Terrameter LS 2 A new scalable resistivity/ IP meter, ensuring a return of investment no matter if starting with a basic or advanced system



ABEM Terraloc Pro 2 A versatile seismograph that can be used with any type of seismic accessory for every possible application



ABEM WalkTEM

A powerful (transient electromagnetic) tool for surveying in the geological near-surface. Available with a new booster option for deeper soundings



MALÂ MIRA HDR The MIRA HDR is a cost-effective 3D GPR array, optimized for mapping large areas to locate buried objects and artefacts.



MALÅ GeoDrone 80 MALÅ GeoDrone 80 is the cutting-edge solution for unmanned surveying in areas that are dangerous or are hard to reach.



MALA Easy Locator Pro WideRange HDR The widest GPR antenna bandwidth available for utility detection on the market with the WideRange HDR GPR



MALÅ 3D Imaging Radar Array (MIRA), is a one-pass 3D system providing a cost-effective solution for large-scale mapping and subsurface object identification



MALA Easy Locator Pro The professional's choice for utility mapping, with added post-processing and positioning features



MALÅ Easy Locator HDR Cost-effective, compact all-in-one utility locator GPR solution for utility detection



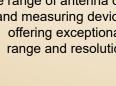
MALA GroundExplorer (GX) A flexible GPR solution with a wide range of antenna options and measuring devices, offering exceptional range and resolution





MALÅ ProEx ProEx is fully compatible

with a broad range of MALÅ GPR antennas, and offers a flexible and versatile GPR solution



GPR-SLICE Software

GPR-SLICE is a GPR imaging

software designed for the creation

of 2D/3D images for use in a

range of geotechnical, engineering,

and archaeological applications.





MALÅ Object Mapper 2018 Object Mapper is an easy-to-use visualization utility mapping software for processing, analysis, and interpretation of utility detection GPR data





MALA Concrete **Explorer (CX)** ConcreteExplorer is an

easy-to-use GPR system designed for concrete investigations and nondestructive imaging of man-made structures



AGS Inversion Software The processing and inversion software developed by Aarhus GeoSoftware is compatible with various electrical and electromagnetic geophysical methods



Preiser covers all aspects of coal and coke testing including preparation, separation & analysis. The company sells in 90+ Countries and has been selling in Africa for 20+ Years.

Their customer success includes: 5 of the Top 10 Steelmakers 9 of the Top 10 Coal Mines 8 of the Top 10 Commercial Labs

Z91-2290-81 Air Drying Oven



The Preiser Air Drying Oven in accordance with ASTM D2013.

Rotary Sample Divider



The Preiser Rotary Sample Divider (RSD) provides fast and accurate sub-division of coal, minerals, ash and other granular samples.

Free Swelling Index System, Complete



Used for the determination of the Free Swelling Index of coal by the electric furnace method as designated by ASTM Standard D-720.

Model 401XL Crusher



Model 401XL has a capacity of 4000 pounds per hour using a 3/8" diameter

Holmes Model 1400 Sample Cutting Station



The Model 1400 sample cutting station accepts crushed sample feed from a Holmes crusher.



Preiser Scientific's Grindability Tester is designed specifically for the determination of the relative "hardness" or abrasive potential of coal.

Preiser Dilatometer



Preiser Dilatometer series of test instruments is used to determine expansion and contraction characteristics of coal, to the next level of usability

Model 502XL Pulverizer



Holmes Pulverizer Model 502XL has a capacity of 400 grams of coal per minute using a screen with 0.024" diameter

Model PAF 2014 Ash Fusion System



The Preiser Scientific Ash Fusion System is designed in accordance with **ASTM Standard**

Model 100 Moisture

Oven

Holmes Model 70XL Riffle



Model #70XL is a totally enclosed, floor model sample riffle

Coke Drum Tumbler Tester, **Double Drum**



The Preiser Model 500 Tumbler is designed and manufactured to comply with ASTM D-3402 Standard



Preiser has enhanced the market leading Plastometer series of test instruments, used to determine the fluidity of coking coal, to the next level of usability.

Preiser Plastometer / **Dilatometer Combination**

The Preiser Model 100

Moisture Oven is designed

as per ASTM

Standard D3173.



Preiser Plastometer series of test instruments is used to determine the fluidity of coking coal.

∫∙insmart Systems

insmart Systems has been engineering, manufacturing, and supplying high quality equipment to customers across the globe since 1993.

Insmart's Industrial solutions include

Quality Assurance and Analysis Equipment for

Cement, Coal, Iron and Steel, Aluminum, Copper, Glass, Ceramic Plants, Educational Institutions, Advanced Research labs

Product Application Areas

Geology, Mineralogy, Metallurgy, Elemental Analysis, Power generation, Defense Research Labs, Nuclear Science, Bio and Pharma Educational Institutions

New Developments

Fully automated container based Robotic lab for cement and iron steel plant Turnkey QC Laboratory setups BOT Solutions for Onsite Coal Processing Mechanized Third party sample collection systems Fully Automated Container Labs for Coal Automatic Vibratory Cup Mill & Pellet Press Automatic Surface polishing machine

Jaw Crushers

- Roll Crusher
- Planetary Ball Mill
- Rod Mill
- Disc Mill
- Hammer Mill
- Cross Belt Clean Radial Sweep
 Sample Collection System
- Double Deck Vibratory Screen
 Hot & Cold Isostatic Press

- Bond's Work Index Ball Mill
- Bond's Work Index Rod Mill
- Ty-Lab Sieve shaker
- Ro-Tap Sieve Shaker
- Laboratory Sieve Shaker
- Wet Sieve Analysis unit
- Riffle Sample Splitter
- Mineral Jig
- Concentrating Table
- Density Separator

- Mineral Separator
- Cyclone test Rig & Hydro Cyclones
- Spiral Test Rig & Spirals
- Davis Tube Tester
- Electromagnetic Drum Seperator (WET)
- Electromagnetic Drum Seperator (DRY)
- Floatation Cell
- Planetary Sample Divider



Bond's Work Index Ball Mill Ro-Tap Sieve Shaker

Mineral Jig

Floatex Density Seperator

Mineral Seperator

Planetary Sample Divider AllPL is a system integrator for setting up of the most advanced and innovative State of the Art Centre of Excellence – providing system and solution for higher technical education.

AIIPL's objective is to bring in leading edge technologies from the best in the world and integrate it with our outstanding service to our customers – conducting with uncompromising integrity, honesty and respect.

We assist you in designing Laboratory, suggest and recommend curriculum as per world best universities, supply, install all equipments and training the faculty members.

Our mission is EMPLOYABILITY TO ALL

We are committed to inculcating a culture of INNOVATION,

encouraging **RESEARCH, ENTERPRENERSHIP** Pathways and

developing FUTURISTIC SOLUTIONS

in HIGHER EDUCATION.



OUR PHILOSOPHY

Bringing success to our Customers, Partners and Employees is our Mission

OUR TEAM

Over 3 decades of Engineering experience, and a team with over a decade of international footprints and knowledge. Pioneers in innovative instrumentation solutions.

We are a professional team that is always willing to satisfy your needs and expectations

OUR HISTORY We have successfully

implemented projects in over 25 countries, established over 10 full fledged laboratories across Africa, Middle East, ASEAN and SAARC Countries.

ONE STOP

Worlds largest one stop source for systems and solution in Civil Engineering, Material testing and Technical Education

APPLICATION AND SOLUTION ORIENTED

Based on our core competencies and a network of collaborative partners, we are able to develop and propose a range of application oriented solutions. Our knowledge in Civil Engineering, Material Testing, Research oriented technologies Instruments and Technical Education, coupled with qualified partners enable us to develop collaborative solutions and customised projects.

CUSTOMER ORIENTED

Reliability and efficiency are your targets. We know you require the same for your instruments: Providing Comprehensive solutions, performance and assurance, tailor-made to the challenges of your demanding world.

OUR IDEOLOGY

Responsiveness is the key to offer the best level of services. AIIPL relies on a powerful network of subsidiaries, offices, resellers, maintenance centers and qualified partners. They are the first steps of efficiency.

Our customers should not have to wait for an answer. Our expertise is at their disposal – anywhere, anytime.

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