

TESTING FACILITY FOR METAL INDUSTRIES

- Chemical Analysis by Spectrometer



- Tensile Test
- Proof Load of Fasteners / Products
- Compression Test
- Bend Test / Re-Bend Test
- Nick Break test
- Transverse Testing
- Fillet Fracture Test
- Flaring Test, Drift-expanding test
- Flattening Test
- Shear Test



- Impact Test (Room to -196°C)



- Micro structure Examination



- | |
|---|
| Carbon Steel, Low alloy Steel |
| Grain size Determination |
| SGL / CI (Distribution, Type, Size Class, Nodule Count, Nodularity) |
| Bearing Steel (Micro, FA, CG, PA, CN, CZ) |
| Case Depth, Decarburizing Depth, Thickness |
| Inclusion Rating (ASTM E45 Method A) |
| Stainless Steel, Other Alloys |
| Phase Analysis as per E562 |
| ASTM A923 Method-A |
| Phase Analysis as per Sigma, Chi, Lave Phase |

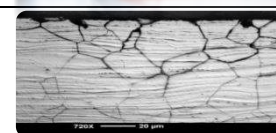
- Macro Analysis (Step Down, Macro, Grainflow)



- Salt Spray Test, as Per IS, ASTM, Etc.



- IGC Test as per ASTM A262 Practice A, B, C, E & F
- Corrosion Test as per ASTM G-28, Method A / B



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"Rajkot Lab", Plot No. 29-30, NH-8, Gondal Highway, Near Tulip Party Plot,
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• Pitting / Crevice Corrosion Test (G48 A & B/A923-C), with MC 24 hrs / 72 hrs • Critical pitting temperature test as per ASTM G48 Method E		
• Hardness Test	Rockwell	
	Brinell	
	Vickers	
	Jominy End Quenched test	
• Hydrostatic Pressure Test Up to 300/600/800/1300 Bar		
• Coating Thickness • Adhesion Test • Uniformity of coating • Mass of Zinc Coating		
EQT, Electrode Qualification • WQT, Welder Qualification Test • Welding Procedure Qualification Tests As per IS, ASTM, ASME, ISO, BS EN - Fillet Fracture Test - Nick Break Test - Face, Side & Root Bend - Tensile, Macro, Micro - Hardness		
• Paint / Emulson Testing - Adhesion by Reverse Impact Resistance Test - Adhesion by Tape Test, Cross-cut test, X Cut Test - Adhesion by T-bend test - Coating Thickness DFT - Effect of Household Chemicals - Film Hardness by Pencil Test - Gloss - Impact - Scratch Hardness Test - Water Content - Viscosity - Mass per 10 Ltr		 

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Metrology Testings as per National / International Standard

- CMM Testing Facility



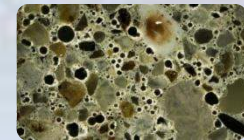
TESTING FACILITY FOR BUILDING / ROAD CONSTRUCTION MATERIALS

Item	Test Parameter	
Steel / Rebar Coupler	• Tensile Test of <u>TMT</u> Bar for % Elongation, Yield Stress, Ultimate Tensile Stress, Mass per Meter • Tensile Test Of Structure Steel • <u>Bend Test</u> • <u>Re-bend Test</u> • <u>Chemical Analysis</u> (C, Si, Mn, P, S, Cr, Ni, Mo, Al, Cu)	
Cement / Fly Ash	• Chemical Test • Compressive Strength • Consistency • Fineness by Dry Sieving • Fineness by Wet Sieving • Setting Time (Initial, Final) • Soundness by Le-Chatlier Test • Specific Surface by Blaine's Permeability	
GGBS	• Compressive Strength • Moisture Content • Setting Time (Initial, Final) • Soundness By Le Chatlier Test • Specific Surface (By Blaine's Permeability) • Chemical Test	
Admixture	• Ash content • Chloride ion content • Dry material content • pH • Relative density	
Bricks	• Compressive Strength • Dimensions • Efflorescence • Water Absorption	

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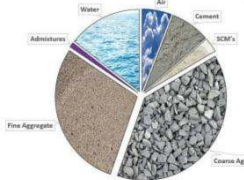


Aggregates	• Abrasion Value • Bulk Density • Elongation Index • Flakiness Index • Crushing Value • Silt Content • Alkali Aggregate Reactivity • Gradation With Fineness Modulus • Impact Value • Specific Gravity • Bulking Of Sand • 10% Fine Value • Water Absorption • Organic / Inorganic Content • Chemical Tests • Petrography Examination	  
Concrete	• RCPT (Rapid Chloride Penetration Test) • Split Tensile Test • Water Penetration / Permeability of Concrete • Flow • Slump test • Moisture Movement • Flexural Strength • Compressive Strength (Normal / Accelerated Cured) • Setting Time • Bleeding	 
Timber, Wood, Flush Door, Plywood etc.	• Moisture Content • Density • Flush Door Tests • Tensile strength Test • Flexural Test / Static Banding Strength • Specific Gravity • Compressive Strength • Shear Strength Test • Impact Indentation Test • Edge Loading Test • Shock Resistance Test • Buckling resistance Test • Slamming Test • Misuse Test • End Immersion Test • Knife Test • Glue Adhesion Test • Screw Withdrawal test	   

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Bitumen	• Ductility Test • Flash & Fire Point • Penetration Test • Softening Point Test • Specific Gravity • Water Content Test • Kinematic Viscosity • Absolute Viscosity • Say bolt Viscosity • Theoretical Maximum Specific Gravity	
Tiles	• Water Absorption • Modules Of Rupture (<u>MOR</u>) • Chemical Resistance • Scratch Hardness • Straightness of Sides / Surface Flatness • Thermal Shock Resistance • Dimensions • Tile Adhesion Test (Field Test + Lab Test)	
Bitumen Core	• Thickness • Density • % of Bitumen Contain • Marshal Stability / Flow Value • Void Contain • VFB / VIM • Bitumen Core Cutting	
Hollow / Solid / Paver Blocks (AAC, CLC etc.) Kerb Stone	• Abrasion Resistance • Compressive Strength • Water Absorption • Density • Moisture Movement • Drying Shrinkage • Splitting Tensile Strength • Freeze Thaw Test	 
Mix Design	• Mix Design Of Concrete • Mix Design Of Pavement Quality Concrete (<u>PQC</u>) • Mix Design Of Dry Lean Concrete (<u>DLC</u>) • Mix Design Of Concrete Using Flyash • Mix Design Of Self Compacted Concrete • Mix Design Of Dense Bitumen M. D. • Mix Design For GSB, WMM • Bituminous Concrete Mix Design (<u>BC</u>, <u>SDBC</u>, <u>DBM</u>)	 

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Soil Laboratory Tests	• Gradation by Sieve Analysis & Hydrometer Analysis • Specific Gravity • Atterberg's Limits • Standard / Modified Procter Test (MDD/OMC) • Free Swell • Shrinkage Limit • C.B.R. Test In Laboratory (Soaked / Unsoaked) • Direct Shear (Box shear) Test • Swell Pressure • Consolidation • Unconfined Compressive strength • Chemical Tests • Triaxial Shear Test • Vane Shear Test • Permeability Test	
Soil Field Tests	• MDD By Sand Replacement • MDD By Core Cutter • Standard Penetration Test (<u>SPT</u>) • Soil Bearing Capacity (<u>SBC</u>) • Plate Load test (<u>EV2</u>) • Soil Investigation by Hydraulic / calyx Rig Machine • Electrical Resistivity Test (<u>ERT</u>) • Thermal Resistivity Test (TRT)	
Rock / Natural Stone, Granite, Kota Stone etc.	• Compressive Strength Test • Moisture Content / Water Content by Wet / Vacuum method • Point Load Index • Density • Hardness • Specific Gravity / Apparent Specific Gravity • Porosity • Visual Inspection (Texture & Cracks) • Split Tensile Test • Resistance to Wear	
Granular Sub base	• Atterberg's Limits • C.B.R. Test In Laboratory (Soaked) • Modified Procter Test (MDD/OMC) • Sieve Analysis • Water Absorption • 10% Fine Value	

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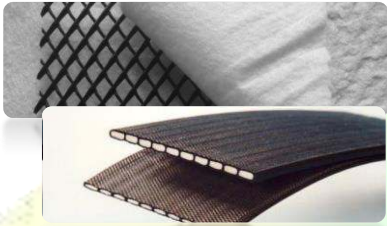


NDT Tests	• Structural fitness Survey • <u>Rebound Hammer</u> Test • Ultrasonic Pulse Velocity Test (<u>UPV</u>) • Concrete Core Drilling • <u>Carbonation</u> Test • <u>Half Cell Potential</u>	   
Field Tests	• Pile Integrity Test • <u>Pull Out Test</u> • <u>Pile Load</u> test (Vertical, Lateral & Pull Out) • Bridge Load Test • Plate Load Test • Sub Grade Reaction K Value Test • Banquet Beam Deflection Test • Span Load Test	  
Wet Mix Macadam / Quarry Spaul	• Atterberg's Limits • Combined Flakiness & Elongation • Impact Value • C.B.R. Test In Laboratory (Soaked) • Modified Procter Test (MDD/OMC) • Sieve Analysis • Abrasion Value • Specific Gravity & Water Absorption • Elongation Index • Flakiness Index	
Aluminum Section	• Anodizing Thickness • Powder Coating Thickness • Size And Thickness Test • Weight Per Section • Tensile Test • Sample Preparation For Tensile Test • Grade identification	
Pipe / Duct	• Stoneware Pipe • Ducting Pipe • Precast Concrete Hume Pipes • PVC Pipe • Scaffolding Pipe • Steel / MS Pipe • Sheathing Duct	 

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Geo Composite / Textile / ParaWeb Gostrap / HDPE / PTFE / PE / Rubber Sheet	• Thickness @ 2kpa • Mass per Unit • Wide Width Tensile Strength MD / CMD • CBR Puncture Strength • In Plane Flow Capacity @ 100/200 Kpa • AOS Apparent opening size • Breaking Load & Elongation • Density and Specific Gravity • Grab Tensile Test Method • Puncture Resistance by falling cone method • Puncture Resistance • Trapezoid Tearing Strength	
• Manhole Cover • Metal Beam Crash Barrier (MBCB) • Emulsion • Kerb Stone • Paints • Paraweb • Rope • Sealants	• Foundation Bolt • GI Barbed Wire • Anti-Stripping Agents • Gypsum • Performed Filler • Plaster of Paris • Pull-Out Test Anchors • Structural bearings	• Anchor Cone & Wedge • Adhesives • Curing compound • Foundry Sand • Glass Bead • Polyethylene Films and Sheets • Precast Concrete Hume Pipes • Water Stoper



RAJKOT LAB

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