



## **GEOTECHNICAL INVESTIGATION, CONSTRUCTION & HIGHWAY MATERIAL TESTING LABORATORY**



## **EDGE2 ENGINEERING SOLUTIONS INDIA PVT LTD**

Geotechnical Investigation | Construction & Highway Material Testings | Non-destructive Testing (NDT),  
Restoration & Rehabilitation | Structural Health Assessment | Stability | Mix designs for concretes  
Design mix for Asphalts | Project Management Consultancy (PMC) | Quality Assurance

(ISO 9001-2015 & ISO 45001: 2018 Certified Company)

**(NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025-2017)**

CIN : U74900KA2009PTC049849 | PAN: ALOPH4358P | GSTIN : 29AACCE1702A1ZD | UDYAM - KR-03-0067528

# ABOUT US

Edge Engineering Solutions Pvt Ltd., started in the year 2009 to serve Geotechnical Investigation, Non-Destructive testing (NDT) and Construction material s testings.

Edge Engineering Solutions Pvt Ltd., has changed to Edge2 Engineering Solutions India Pvt Ltd., in the year 2021and expanded its services in the field of Construction Material Testing, Design Review, Non-Destructive testing (NDT) Restoration, Rehabilitation Works, Project Management Consultancy, third party inspection, Quality Assurance with an own premises of 4 storied building consists of area around **5500 sqft. in Bengaluru**

**Ground Floor :** Having Steel, Concrete & Aggregates Sections.

**First Floor :** Having Geotechnical (Soil), Cement, Bitumen Sections.

**Second Floor :** Having NDT & Administrative Department.

**Third Floor :** Having quality control test training center for civil engineers.

Edge2 Engineering Solutions India Pvt Ltd has a fully equipped Material Testing Laboratory with modern, scientific, and High end equipments in the field of Construction material testing & Non-Destructive Testing (NDT).

We work honestly with our clients. There by provide Independent Technical, Technological, Strategic & Commercial Consultancy services to Pertaining Projects for all the Communities.

# VISION

**Commitment** - We are dedicated to provide our clients with the highest quality of service possible, for the best value. We are devoted to provide our employees a safe & challenging work environment. Finally, we are committed to the betterment of our community & our profession.

**Safety** - Our employees are the most valuable assets. We give safe work environment through an education & training. We are dedicated to the safety for personnel, and we consider safety for the performance of our services.

# QUALITY

Quality lies at the heart of everything that we do, the calibrated accuracy and precision of our various laboratory and field equipments,to the proper performance of our standardized testing and inspection services.

# MISSION

Our Mission is to offer innovative and exceptional services through methodologies. Helped organizations, industries, clients of all sizes to achieve improved, cost-effective service quality levels.



# GEOTECHNICAL INVESTIGATION

Field Investigation done by different Boring methods namely Auger Boring, Rotary / Hydraulic drilling then samples collected are followed by In-house Laboratory testings. Some of the tests conducted Soil samples as per Indian Standards are mentioned below

## FIELD TESTS

- Standard Penetration Test - Calyx, Powerwinch : Hydraulic (Automatic SPT)
- Plate Load Test
- Field CBR
- Pile Load Test
  - < Static
  - < Dynamic
- Sand Replacement Test
- Core Cutter Method
- Pull out Test
- Electrical Resistivity Test
- Pile integrity Test
- Field Permeability
- Cross Hole Seismic Test
- Seismic Refraction



## LAB TESTS

- Grain size Analysis
- Liquid and Plastic Limit
- Shrinkage Limit
- Free swell Index
- Specific Gravity
- Water Content
- California Bearing Ratio (CBR)
- Point Load Index
- Direct Shear Test
- Heavy Compaction
- Light Compaction
- UCS on Rock Cores
- Consolidation Test
- Triaxial Test - UU
- Permeability Test
- Porosity on Rock



## PILING

- Bored Cast In situ piles
- Micropiles
- Contiguous piles
- Driven piles

## GROUND IMPROVEMENT TECHNIQUES

- Grouting
- Shotcreting
- Soil Nailing
- Rock Bolting
- Ground Anchors
- Dewatering
- Rain Water Harvesting

## EARTH RETENTION STRUCTURES

- Anchored Sheet pile
- Retaining walls

## LIQUEFACTION ANALYSIS

## SLOPE STABILITY ANALYSIS



# **CONSTRUCTION MATERIAL TESTING LABORATORY**

## **STEEL**

Our Laboratory is Equipped with “**UTE120HGFL**” Hydraulic Grip Front Loading Electronic Universal Testing Machine manufactured in FIE for testing materials under tension, compression bending, transverse and shear loads. FIE Electronic Universal Testing Machine complies with Grade “A” of BS: 1610: Part1:1992 and class 1 of IS-1828-Part1:1991.

**Load Capacity:** 1200kN

Some of the Key feature of UTM are open type cross head, Printer & PC graphs enable study the behavior of the material, Motor driven threaded columns for quick effortless adjustment of lower cross-head-to facilitate rapid fixing of test specimen, Simple controls for ease of operation, The hydraulic pump provides continuously non-pulsating oil flow. Hence the load application is very smooth. For Hydraulic Wedge action grips separate control remote is provided with selector switches indicating clamp – declamp and null positions.

Physical tests are conducted for Steel Weight / Meter, Ultimate Tensile Strength, Yield Strength, Bend Test & Re-Bend Test are some of the Physical test conducted in our laboratory on Steel as per Indian Standards.



## **CHEMICAL ANALYSIS OF STEEL**

Our Laboratory is Equipped with “**MOSS Optical Emission Spectrometer**”. Moss is the world latest most compact Optical Emission Spectrometer (OES). Having a rapid analysis time of 25 seconds or less across all type of metals.

- Compact, scalable CCD-based arc-spark OES
- Fully digital, current-controlled plasma source
- Modular and scalable applications that scale with user requirements
- Multi-base – without limitations
- Analysis of C, S, P, N etc. to  $\leq 50$  ppm
- Single sample re-standardization
- Exceptional accuracy, precision and repeatability



# CONSTRUCTION MATERIAL TESTING LABORATORY

## CONCRETE AND PRE-CASTED BLOCKS

Our Laboratory is Equipped with “**Matest Servoplus Evolution**” high performance Digital Compression Testing Machine with a capacity of two load frames **2000kN, 500kN**. In addition to the above we are also having Automatic Flexure Testing Machines have been designed to meet the need for reliable and consistent testing of Flexural test on standard concrete beams. Some Key Feature of Digital Compression Testing Machine is Digital Graphic Display allows Real Time Load Vs Time Graph and Accurate maintenance of Pace rate control.

### Tests on Building Bricks

- Dimension
- Compressive Strength
- Efflorescence
- Water Absorption

### Tests on Solid & Hollow Blocks

- Dimension
- Compressive Strength
- Water Absorption
- Block Density

### Tests on Paver Blocks

- Compressive Strength
- Water Absorption

**Compressive Strength on Concrete Cubes ,Concrete Core , Kerb Stones , Concrete Covering Slab conducted.**



## AGGREGATE TEST

Aggregates are tested for strength, Toughness, Hardness, Shape and Water Absorption to decide the suitability for all types of Constructions. Some of the tests conducted on Coarse and Fine aggregates as per Indian Standards are mentioned below

- Sieve Analysis
- Bulk Density (Loose & Compacted)
- Materials finer than 75micron
- Specific Gravity & Water Absorption
- Flakiness & Elongation Index
- 10% Fines Value
- Aggregate Crushing Value
- Aggregate Impact Value
- Bulking
- Los-Angeles Abrasion Test



## **CEMENT & CEMENTITOUS MATERIAL**

Laboratory is equipped with Best in class of Equipment's and Maintaining prescribed Environmental conditions as per Indian Standards for testing of Cement and Cementitious Materials like Fly ash , GGBS , Silica and Micro Silica etc..

- Normal or Standard Consistency
- Compressive Strength
- Density
- Initial Setting Time
- Final Setting Time
- Fineness by Dry Sieving
- Fineness - Blaine's Air Permeability Method
- Soundness

Chemical Analysis are conducted for Cement and Cementitious Materials. Concrete Mix Designs are conducted.

**We carry out tests for Construction and Highway Materials like Wood, Plywood , Tiles, Structural Steel , Admixtures , Water, Bitumen, Bituminous layers, Granular Sub Base (GSB), Wet Mix Macadam (WMM), Embankment, Sub-Base layers etc.,**



## **STRUCTURAL HEALTH ASSESSMENT/STABILITY**

Overall health and performance checkup of the building. Structural audit helps to understand the status of the old building. The Audit helps to highlight & investigate all the risk areas, critical areas and whether the building needs immediate attention. It covers the structural analysis of the existing frame and highlights the weak structural areas for Static, Wind & Earthquake loads. If the building has changed the user, from Residential to Commercial or Industrial, this should bring out the impact of such a change. Modification of Conceptual designs in incorporating required changes and preparation of preliminary drawings. Scaled physical modelling to explain the intent of design. Preparation of necessary drawings for clients / statutory approvals and ensure compliance with Codes, Standards and Legislation.

Structural Analysis of the buildings has been carried out for all available loads using different software like STAAD Pro. We also use Sketch Up and 3ds max and other softwares to present the same to the client.

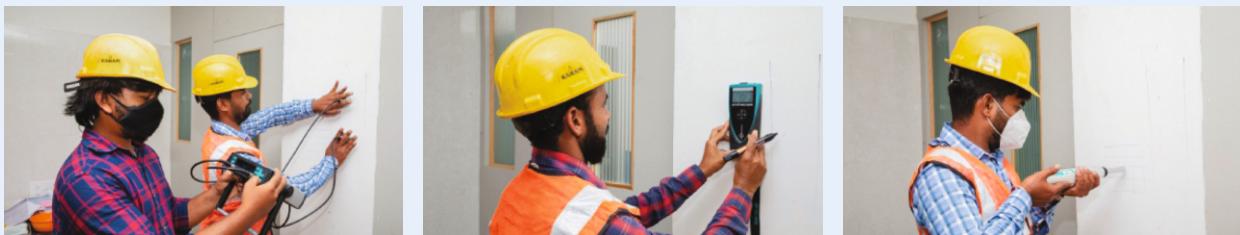
## **PROJECT MANAGEMENT CONSULTANCY, QUALITY ASSURANCE & THIRD PARTY INSPECTIONS**

- We Provide Project Management Consultancy services to deals with various factors such as Scheduling, Cost Budgeting, Risk Identifying, Monitoring & Controlling.
- Provide assessment of construction progress w.r.t Schedule, Cost and Quantity.
- Site supervision during construction to ensure effective implementation of Quality & Safety Plan. Providing Third Party Inspection (TPI), Quality Assurance, Independent assessment of construction.



# NON-DESTRUCTIVE TESTING, RESTORATION & REHABILITATION

- Non-Destructive Test will be carried out for RCC members like columns, beams and slab etc.,
- Non destructive tests confirm the grade of concrete, availability of reinforcement steel, cover concrete.
- Non destructive test carried to access the strength and present health condition of structural members.
- Feasibility study for construction of additional floors can be assessed by NDT & Structural analysis softwares.
- Assessment of damages and distress in the building and providing necessary recommendations.
- Repair and Rehabilitation is necessary to save hazardous failure of structures. It is recommended for old buildings which have some signs like Cracks, Corrosion of Embedded Materials, etc. Therefore, timely maintenance of structures is required. Most of the olden structures are given strength by doing process of repair and rehabilitation



## OUR ESTEEMED CLIENTS



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SCAN FOR LOCATION

