

## STRUCTURAL ENGINEERING LAB- CONSULTANCY

### 1. Strain Measurement

Sample types: Beams up to 5.5m, short and long columns, slabs and other concrete elements.

Charges:

	Internal (Rs/sample)	External (Rs/sample)
Measurement charges per strain gauge	Rs 100	Rs 150
Additional testing charge (Includes load measurement)	Rs 500	Rs 750

Note: Strain gauge charges to be borne by the client. Support arrangements shall be designed and manufactured by client as per requirement

### 2. DAQ System based Load Measurement (Computerized)

Sample types: Beams up to 5.5 m, short and long columns, slabs and other concrete elements

	Internal (Rs/sample)	External (Rs/sample)
Testing charge	Rs 500	Rs 750

Note: Support arrangements shall be designed and manufactured by client as per requirement

### 3. DAQ System based Acceleration Measurement (Computerized)

Sample types: Beams up to 5.5 m, short and long columns, slabs and other concrete elements for impact loading

	Internal (Rs/sample)	External (Rs/sample)
Testing charge	Rs 500	Rs 750

### 4. Structural Strength Assessment and Structural Design Consultancy

Cost as per structure.

## SURVEYING LAB

### 1. Total Station

- a. Topographical survey (Rs.2000/Acre plus mobilisation charges)
- b. Land Area
- c. Levelling work
- d. Building setting out
- e. Contour survey

## GEOTECHNICAL ENGINEERING LAB – CONSULTANCY

### 1. Particle size distribution by sieve analysis and soil classification

Internal (Rs/sample)	External (Rs/sample)
Rs. 115 per sieve (minimum 1150)	Rs. 150 per sieve (minimum 1500)

### 2. Particle size distribution by Hydrometer analysis and soil classification

Internal (Rs/sample)	External (Rs/sample)
Rs. 2000	Rs. 2500

### 3. Field density by Core cutter method

Internal (Rs/sample)	External (Rs/sample)
Rs. 2000	Rs. 2500

### 4. Field density by Sand replacement method

Internal (Rs/sample)	External (Rs/sample)
Rs. 2500	Rs. 3000

### 5. Proctor compaction test

Internal (Rs/sample)	External (Rs/sample)
Rs. 4000	Rs. 5000

### 6. CBR test

Internal (Rs/sample)	External (Rs/sample)
Rs. 6000	Rs. 7500

## TRANSPORTATION ENGINEERING LAB – CONSULTANCY

- Marshall Stability Testing Machine with extruder and compactor- for bituminous mix design – Rs 15000 per design
- Bitumen Centrifuge Extractor - for bitumen extraction –Rs 2500 per sample
- CBR Testing Machine - for CBR test of subgrade soil – Rs 5000 per sample
- Universal Penetrometer - for penetration test of bitumen
- Ring & Ball Apparatus - for softening point of bitumen
- Ductility testing Machine - for ductility of bitumen
- Standard Tar Viscometer - for viscosity of cutback bitumen
- Aggregate Impact Tester - for toughness test of aggregates
- Los Angeles Machine - for hardness test of aggregates

- **Compression testing Machine - for crushing strength test of aggregates**
- **Thickness Gauge & Length Gauge - for shape test of aggregates**
- **Flash point: Pensky Marten apparatus- for flash and fire point temperature of bitumen**

## MATERIAL TESTING LABORATORY

### 1. UTM (Universal Testing Machine) Tests

Tension Tests On Metals

<i>Internal (Rs/Sample)</i>	<i>External (Rs/Sample)</i>
Rs. 400	Rs. 500

Bending Test for Wood

<i>Internal (Rs/Sample)</i>	<i>External (Rs/Sample)</i>
Rs. 400	Rs. 500

### 2. Hardness Tests

Fig 2: Vickers apparatus

fig3: Rockwell cum brinell machine

<i>Internal (Rs/Sample)</i>	<i>External (Rs/Sample)</i>
Rs. 200	Rs. 400

### 3. Spring Tests

Modulus of rigidity of springs

<i>Internal (Rs/Sample)</i>	<i>External (Rs/Sample)</i>
Rs. 400	Rs. 500

### 4. Impact Strength

Impact strength of Metals

<i>Internal (Rs/Sample)</i>	<i>External (Rs/Sample)</i>
Rs. 200	Rs. 400

## 5. Non-Destructive Testing - Ultrasonic Pulse Velocity Meter

Make: Proceq Pundit Lab Plus

Sample type: Concrete

Charges:

	Internal (Rs)	External (Rs/sample)
Construction Site	1500 per spot	2000 per spot
Lab sample	400 per sample	500 per sample



## 6. Concrete Core Cut And Strength Test

Make: Dongcheng

Sample type: Concrete, Rock

Charges:

	Internal (Rs)	External (Rs/sample)
50 mm core	1200 per core	1500 per core
100 mm core	1200 per core	1500 per core



## 7. Concrete Mix Design

Sample Type: Cement Concrete Mix design

Charge: 15000/-

**8. Strength Test On Brick, Paver Block, Solid Block And Hollow Block, Lightweight Blocks, Concrete Cubes**

Charges:

	Internal (Rs)	External (Rs/sample)
Brick	200 per sample	250 per sample
Paver block	200 per sample	250 per sample
Solid Block	200 per sample	250 per sample
Hollow Block	200 per sample	250 per sample
Light Weight block	200 per sample	250 per sample
Concrete Cubes	200 per sample	250 per sample

**9. Water Absorption Test on Brick, Paver Block, Solid Block and Hollow Block, Lightweight Blocks**

Charges:

	Internal (Rs)	External (Rs/sample)
Brick	150 per sample	200 per sample
Paver block	150 per sample	200 per sample
Solid Block	150 per sample	200 per sample
Hollow Block	150 per sample	200 per sample
Light Weight block	150 per sample	200 per sample

**10. Block Density Test On Brick, Paver Block, Solid Block And Hollow Block, Lightweight Blocks**

Charges:

	Internal (Rs)	External (Rs/sample)
Brick	200 per sample	250 per sample
Paver block	200 per sample	250 per sample
Solid Block	200 per sample	250 per sample
Hollow Block	200 per sample	250 per sample
Light Weight block	200 per sample	250 per sample

**11. Abrasion Test On Concrete And Ceramic Tile**

Make: Aimil

Sample type: concrete paver block, and ceramic tile

Charges:

	Internal (Rs)	External (Rs/sample)
Cutting charge	100 per sample	100 per sample
Testing	350 per sample	400 per sample



## 12. Physical Properties Of Cement

Charges:

	Internal (Rs)	External (Rs/sample)
Testing	1500 Rs per cement	1800 per cement type

## 13. Physical Properties Of Construction Materials

Charges:

	Internal (Rs)	External (Rs/sample)
Specific gravity	400 / aggregate type	600 / aggregate type
Bulk density	100 / aggregate type	200 / aggregate type sample
Water absorption	400 / aggregate type	600 / aggregate type
Sieve analysis	1200 / aggregate type	1500 / aggregate type
Combined gradation	1200 / aggregate type	1500 / aggregate type
Crushing strength	500 / aggregate type	600 / aggregate type
Soundness test	1000 / aggregate sample	1200 / aggregate sample

## 14. Steel Reinforcement Tests

Specimen: TMT bars, Mild steel, wires

Charges:

	Internal (Rs)	External (Rs/sample)
U bend test	400 / sample	500 / sample
Rebend test	400 / sample	600 / sample
Rolling meter test	50 / sample	100 / sample
Tensile strength test, elongation	400 / sample	500 / sample
Breaking load test on wires	200 / sample	300 / sample
Tensile strength test on wires	400 / sample	500 / sample
Breaking load test on weld joints	200 / sample	300 / sample
Breaking load test on bolt connections	200 / sample	300 / sample

## **OTHER CIVIL ENGINEERING SERVICES**

### **1. Architectural Design**

Architectural design of all type of buildings including estimation, local body approval, structural design, periodical supervision etc.

### **2. Structural Consultancy**

Structural design of all type of structures such as bridges, buildings etc. with periodical supervision.