A.K Geo Material Laboratory

Construction Material Testing & Research Laboratory

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Madhya Pradesh Public Work Department

MPPWD Certified Lab
ISO : 9001:2015 Certified Lab

International Organization for Standardization ISO 9001

About Us

AKGML introduce ourselves as professionally managed and ISO certified laboratory engaged in testing of wide range of materials. We have on our roll highly qualified, experienced & trained technical personnels. We carry out specialized testing and identification of water & effluents, minerals. building and road materials i.e. bricks, cement, aggregate, admixtures, concrete, design mix, bitumen, DBM, BM, job mix, tiles, marbles, soil etc.

A.K GEO Material Laboratory (AKGML) was founded in 2019 by Er. Sumit Shah (B.E) and Co-ordinated by Er. Ajit Kumar Prajapati(M. TECH. Structur)Er. Abhishek vishwakarma(B.E),Er. Abhishek Shah and having a rich experience in the field of civil engineering and knowledge about material testing of different types of construction materials & Techniques.

Vision & Values

AKGML strive to exceed our customers' expectations while maintaining the highest industry standards, providing safe working environments, respecting the dignity of every employee, and minimizing our impact on the environment.

Mission

Transforming the Civil needs according to our clients dreams is the mission of our company. AKGML has taken up the mission to provide world-class services and ensure concrete relationships with its customers.

Quality & Policy

The Quality Policy of A.K Geo Material Laboratory. is to achieve self and customer satisfaction by providing professional Inspection and Testing services fully complied with customer and regulatory bodies and to be recognised as global leader in this business.

AKGML management's committed to maintain high standard and implement latest technologies by continues learning to provide best services to our client. As per the quality policy of this laboratory all the test and services are always carried out in accordance with Indian standard, ASTM, AASHTO ,BIS method, and our clients requirements.

Our Services

The core activity of A.K Geo Material Laboratory is Inspection, monitoring of trade and shipments and Testing and Certification of :

1. Sub Soil Exploration And Testing In Site.
2. Material Testing In Laboratory.
3. Geo-technical Consultancy.
4. Architectural & Structural Services.
5. Engineering Survey.
6. Supervision..
7. Project Management.
8. Building Planning & Construction.
9. Estimate And Valuation.
10. Govt. And Pvt. Contractor.
11. 3D View, Elevation, Interior Design.

Type Of Test Conducted By AKGML

- Field Test
- Laboratory Test

FIELD TEST

TEST ON SOIL

1. **Geotechnical Investigation & Sample Collection**

2. **Standard Penetration Test (IS 2131-1981)**

3. **Plate Load Test (IS - 1888-1982)**

4. **Sand Replacement method (IS:2720 (Port XXVIII)-1974)**

1. *Borehole Drilling using Auger/ Mechanical Drilling, Collection of Disturbed and Undisturbed samples for testing.*

2. *The Standard Penetration test (SPT) is a simple and inexpensive test to estimate the relative density of soils and approximate shear strength parameters.*

3. *Plate load test is a field test, which is performed to determine the ultimate bearing capacity of soil and the probable settlement under a given load.*

4. *To determine the field density of soil at a given location by sand replacement method.*

5. **Core Cutter Method (IS: 2720 (Port XXIX) -1975)**

6. **Rapid Moisture Content: (IS: 2720- PART- II)**

7. **Concrete&Bituminous Pavement Core Cutting By Diamond Core Cutter:**

5. To determine the Field density of Fine-grained soil by using core cutter test.

6. To determine the moisture content of soil quickly, without having to wait for the moisture to evaporate.

7. A Core drills used for concrete are generally called Diamond Core Drills.

Test Conducted By AKGML Laboratory

Soil/Murum	Water	Lime/Fly Ash	Bituminous Pavement Design Of DBM,SDBC & BC
Coarse Aggregate	Cement	Rock	Concrete Mix Design M20,M30,M40 & All
Fine Aggregate (sand and stone dust)	Brick (all types)	Bitumen	Other Materials

LABORATORY TEST

1. **Grain Size Analysis (IS-2720-PART-IV-1985)**

2. **Atterberg Limits (IS: 2720-PART-V-1985)**

3. **Specific Gravity (IS - 2720 - PART-III-1980)**

4. **Free Swell Index(IS-2720-PART-XL-1970)**

5. **Compaction Test (Light & Heavy) (IS-2720-Part-VII & VIII-1983)**

1. For determination of particle size distribution of fine, coarse and all-in-aggregates by sieving.

2. To determine the water contents of a fine-groined soil its shrinkage limit, plastic limit, and liquid limit.

3. Ratio of the weight of a given volume of material to the weight of on equal volume of distilled water at 27°.

4. For determination of free swell index of soils.

5. To determine the maximum dry unit weight and water content of compaction of soil.

6. **Permeability test (IS-2720 — PART-17-1987)**

7. **Direct Shear Test (IS — 2720-PART-XIII - 1986)**

8. **Swelling pressure (IS -11550 — 1985)**

9. **Consolidation test (IS - 2720-PART- XV -1965)**

10. **California Bearing Ratio test (IS -2720-PART-XVI - 1979)**

6. Permeability (or hydraulic conductivity) refers to the ease with which water con flow through" a soil.

7. To determine the shear strength parameters for given soil using the direct shear test .

8. swelling pressure in expansive soils in relation to design of foundations single/double storey buildings.

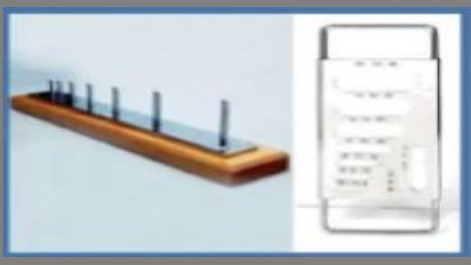
9. Soil consolidation testing is used to predict the ability of a certain soil to bear a load safely.

10. The California Bearing Ratio (CBR) test is on empirical experiment.

TEST ON AGGREGATE

1. **Sieve Analysis - (IS: 2386 – PART-I- 1963)**

2. **Flakiness & Elongation Index (IS : 2386-PART-IV-1963)**



3. **Los Angles Test (IS- 2386-PART-IV-1963)**

4. **Impact Value-(IS:2386-PART- IV- 1963)**

1. For Determination of the particle size distribution of Fine Aggregate and coarse aggregate.

2. For determination of the flakiness index and elongation index of coarse aggregate .

3. The Los Angeles (L.A.) abrasion test isa common test method used to indicate aggregate toughness and abrasion characteristics .

4. For determination of the aggregate impact value of coarse aggregate, whichpasses 12.5 mm. IS sieve and retained on 10 mm. IS sieve.

5. **Crushing Value- (IS:2386 –PART-IV-1963)**

6. **Water Absorption & Specific Gravity (IS : 2386 - Port III — 1963)**

5. For determination of the aggregate crushing value of coarse Aggregate.

6. For determination of specific gravity & water absorption of aggregate.

TEST ON BRICK

1. **Water Absorption (IS: 3495 - PART- II -1992)**

2. **Efflorescence (IS: 3495 - PART- III-1992)**

1. To determine the water absorption of bricks material.

2. To determine the qualify of bricks and salts affects on bricks.

TEST ON CEMENT

1.	Initial & Final Setting Time & Consistency Test (IS:4031 -Part – IV & V - 1988)	
2.	Soundness by Le-chatelier Apparatus. (IS:4031 -PART III-1988)	
3.	Specific Gravity of Cement (IS: 4031-PART XI1988)	
4.	Compressive Strength (IS:4031 -PART VI-1988)	
5.	Concrete Slump Cone Test - (IS - 1199- 1959)	

1. Quality of water required to produce a cement paste of standard consistency & find out the initial & final setting time of cement.

2. This property by virtue which the cement does not undergo any appreciable expansion or change in volume.

3. The ratio between the weight of a given volume of material and weight of on equal volume of water.

4. The Compressive strength test on concrete cube/core is required to determine the strength of concrete in structure.

5. The test measures consistency of concrete. and It is performed to check consistency of freshly mode concrete.

6.	**Marshall Stability Test (IS - 1205:1978)**	
7.	**Penetration Test (IS – 1203 – 1978)**	
8.	**Ductility Test - (IS 1 208 - 1978)**	
9.	**Flash Point (IS 2091 - PART - XXI)**	
10.	**Tar Viscomefer - (IS 1206 - PART - II)**	

1. To determine the Marshall stability and flow value of bituminous mixture and design of BC, SDBC, DBC.	*2. To determine the consistency of bituminous material and grade of bitumen.*	*3. ductility of a given sample of bitumen & to determine the suitability of bitumen for its use in rood.*	*4. Pesky Martin Flash & Fire Point Apparatus For determining the flash point of fuel oils and lubricating oil.*	*5. For determining the viscosity of cut back bitumen and rood oil.*

TEST ON SAND

1. **Silt Content Test of Sand (IS: 2386-PART-II-1963)**

2. **Grading of Sand (IS - 2386-PART- II -1963)**

3. **Building of Sand (IS - 2386-1963)**

1. *Fine aggregate containing more than allowable percentage of silt shall be washed so as to bring the silt content within allowable limits.*

2. *On the basis of particle size, fine aggregate is graded into four zones.*

3. *The volume increase of fine aggregate due to presence of moisture content is known as bulking.*

TEST ON WATER

1. **PH value Test.**
2. **Turbidity Test.**
3. **Conductivity Test.**
4. **Total Suspended Solid Test.**
5. **Total Hardness Test.**
6. **Chloride Content Test.**
7. **Sulphate Content Test.**
8. **Physical Test.**
9. **COD Test.**
10. **BOD Test.**

SOIL TESTING DONE BY AKGML

••THANK YOU ••