GDR GEOSYNTHETIC & MATERIAL TESTING LAB PVT. LTD

NABL ACCREDITATION AS PER ISO/IEC:17025

We are a trusted partner in quality assurance, specializing in Geotech Investigation- Soil & Rock Testing, Building Materials,Concrete Mix Design , NDT, Bridge Load and a wide range of Geosynthetics — including Geotextile, Geocomposite, Geogrid, Coir Bhoovastra, Glass Grid, Geocell, EPDM Pad, and Cavity Box,Geostrap,





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1. General Introduction



GDR GEOSYNTHETIC & MATERIAL TESTING LAB PVT LTD
was established in 2024.
GDR has been providing Geotechnical Testing(Soil), Geosynthetic Testing Building Materials Testing & Bitumen Test , NDT Test as an NABL approved
Inspection Company

GDR continued to expand its operations participating in the Kingdom's rapid growth during this period. Today, GDR desire to stands as one of the Major Geotechnical Investigation & Geosynthetic Testing provider across the Kingdom.

Vision : We are committed to deliver our best Quality Services to all our valuable clients at the right time, by giving the most value for money through the most environment friendly methods. We consider our clients and suppliers as partners in our growth

Mission : Our mission is to deliver accurate, reliable, and timely test results that support safe construction and sustainable development.

Testing Parameter

Rock Testing

- UCS
- Specific Gravity
- Water Content
- Water Abosorption
- Point Load Index
- Density

Site Test

- Rebound Hammer
- Bridge Load Test
- UPV
- SPT Test (Soil)

Site Test

- Plate Load Test
- Field Dry Density
- DCPT Test
- Pile Load Test
- Field CBR
- Cross Bore Hole Shear Wave Test
- Block Vibration Test (BVT)
- ERT
- Dynamic Pile Load Test

Soil Testing

- Grain Size Analysis
- Proctor compaction
- Permeability test
- Atterberg limits
- Triaxial test
- California Bearing Ratio test (CBR)
- Consolidation Test
- UCS, Specific Gravity
- Direct Shear Test
- Water Content , FSI

Testing Parameter

Geotextile/Geobag

- Apparent Opening Size
- Elongation
- Grab Breaking Load
- Index Puncture Resistance
- Liquid Absorption
- Mass Per Unit Area
- Nominal Thickness
- Seam Strength & Seam Efficiency
- Static Puncture Strength (CBR)
- Trapezoid Tearing Strength
- Water Permeability (Permittivity)
- Wide width Tensile Strength
- Brusting Strength by Ball Brust

B. Geocell

- Carbon Content
- Density
- Local Overstressing
- Peeling Test
- Spliting Test
- Strip/Cell Wall Thickness
- Tensile Shear Stress

C. Geocomposite

- Apparent Opening Size
- Elongation
- In Plane Permeability
- Mass Per Unit Area
- Nominal Thickness
- Static Puncture Strength (CBR)
- Water Permeability (Permittivity)
- Wide width Tensile Strength

Testing Parameter

Geogrid/Geostrap/ Glass Grid/Extruded Geogrid

- Elongation
- Mass Per Unit Area
- Tensile Strength at 2 % Strain
- Tensile Strength at 5 % Strain
- Tensile Strength
- Thickness At Rib & Junction
- Junction Strength & Junction Efficiency

Geomembrane

- Density
- Elongation
- Nominal Thickness
- Tensile Strength
- Index Puncture Resistance
- Tear Resistance Graves Tear
- Wide width

Cavity Box

- Density
- Elongation
- Tensile Strength

EPDM Pad

- Density
- Hardness

Coir Bhoovastra

- Elongation
- Mass Per Unit Area
- Nominal Thickness
- Trapezoid Tearing Strength
- Water absorption Capacity of Coir
- Wide width Tensile Strength

Asphalt Reinforced Composite Grid

- Elongation
- Tensile Strength
- Mass Per Unit Area

Testing Parameter

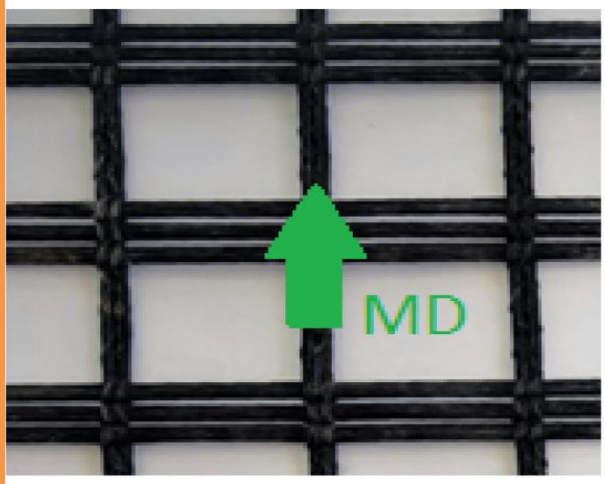
Geogrid/Geostrap/Geotextile

Chemical Resistance of Geosynthetic to Liquid

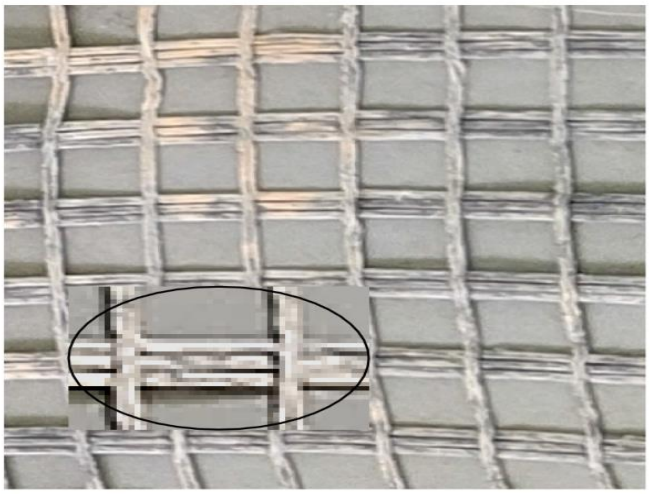


Geogrid/Geostrap/Geotextile

Installation Damage Reduction in Factor



a) Control sample



b) Damaged sample

Concrete Mix Design

In a broad sense “designing” a concrete mix means selecting the proportions of fine and coarse aggregate, cementitious materials, admixtures, and water, that when combined will produce concrete having certain desired qualities

Compressive Strength : - Concrete Cube,

Steel Test

Bitumen Test

Cement Test : Standard Consistency, Setting Time ,Fineness By Blain’s Air Permeability ,Fineness By Dry Sieving ,Soundness by Le-Chatelier ,Density or Specific Gravity ,Compressive Strength,

Coarse Aggregate : Sieve Analysis, Elongation Index, Flakiness Index ,Surface Moisture, Deleterious Material, Compacted Bulk Density, Loss Bulk Density, Specific Gravity, Water Absorption, Impact Value, Crushing Value, 10 % Fines Value, Loss Angeles Abrasion Value, Soundness by MgSO4, Soundness by Na2SO

Fine Aggregate : Sieve Analysis, ,Surface Moisture, Deleterious Material, Compacted Bulk Density, Loss Bulk Density, Specific Gravity, Water Absorption, Silt Content , Soundness by MgSO4,

Rock Testing

Rock testing, or rock mechanics testing, involves evaluating the mechanical properties and behavior of rocks under various conditions. These tests are crucial for understanding rock behavior in construction projects, natural geological processes, and other applications

Purpose and Importance:
Understanding rock properties is essential for:

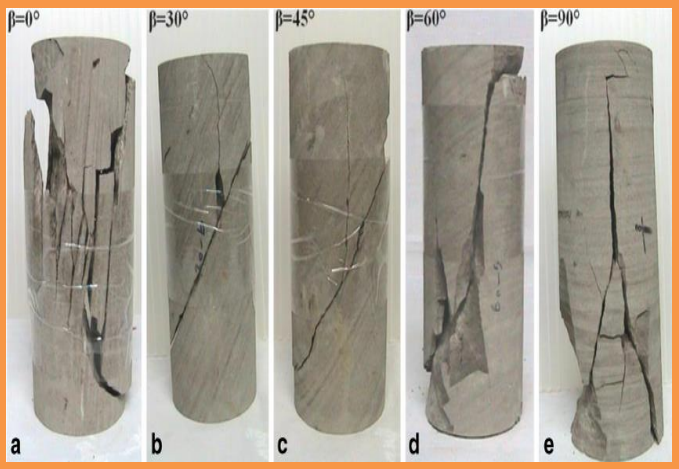
- Construction: Designing foundations, tunnels, and slopes.

Mining: Optimizing rock blasting and excavation.
Geological studies: Understanding natural processes and hazards.
Rock testing provides data on strength, elasticity, durability, and deformation characteristics, helping engineers and geologists make informed decisions.

ROCK UCS TEST



TYPES OF FAILURE ROCK FIGURE



Point Load Index Test



GEOTECH INVESTIGATION FOR SBC

A geotechnical investigation, also known as a ground investigation or site investigation, is a process of evaluating subsurface soil and rock conditions at a construction site to determine their suitability for a project and to provide essential data for design and construction. It involves various methods of data collection, laboratory testing, and analysis to understand the site's geological and geotechnical



Purpose of Geotechnical Investigation:

Site Suitability:
Determines if the site is appropriate for the proposed construction, considering soil type, stability, and potential hazards.

Design and Construction:
Provides crucial data for designing foundations, slopes, retaining walls, and other structures, ensuring they are safe and cost-effective.

Construction Method:
Helps in planning the best construction methods, including excavation, dewatering, and material selection.

Subsurface Exploration:
Involves drilling boreholes, excavating test pits, and using geophysical methods to investigate the soil and rock layers.

Sampling:
Collecting soil and rock samples for laboratory testing.

In-situ Testing:
Conducting tests directly at the site, such as Standard Penetration Tests (SPT) and Cone Penetration Tests (CPT), to assess soil properties.







SAMPLE TESTING

FIGURE

Grain Size Analysis: A method used to determine the distribution of particle sizes within a soil sample.

Hydrometer Test : a technique used to determine the particle size distribution of soil, particularly for particles finer than 75 micrometers (0.075 mm)

Liquid Limit /Platic Limit : Atterberg limits that define the boundaries of the plastic state of fine-grained soils.

Triaxial Test (UU, CU, CD): a geotechnical laboratory test used to determine the shear strength and stress-strain behavior of soil and rock samples.



SITE TESTING

FIGURE

Rebound Hammer Test : a non-destructive method used to assess the compressive strength of concrete.



Ultra Sonic Pulse Velocity Test : A non-destructive method used to assess the compressive strength of concrete.



Bridge Load Test : A bridge load test is a procedure to assess a bridge's structural capacity and performance by applying controlled loads and measuring its response. This helps determine if a bridge can safely handle the loads it's designed for and identify potential weaknesses. Load tests are crucial for evaluating both new and existing bridges, ensuring their safety and reliability.



Concrete Core Cutting Test :
A method used to assess the strength and other properties of hardened concrete in existing structures.



Standard Penetration Test (SPT):
A widely used in-situ geotechnical test that assesses the properties of soil, particularly for foundation design.This "N-value" provides insights into soil density, strength, and other parameters.

SPT automatic trip hammer system

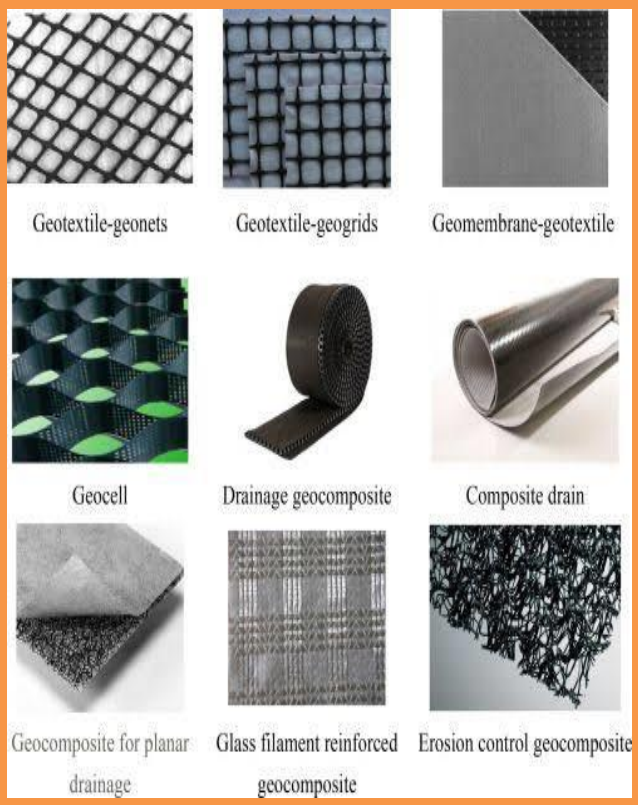


Purpose:
The SPT is primarily used to determine the geotechnical properties of subsurface soils, especially for foundation design. It helps engineers understand the soil's ability to support structures and predict potential settlement.

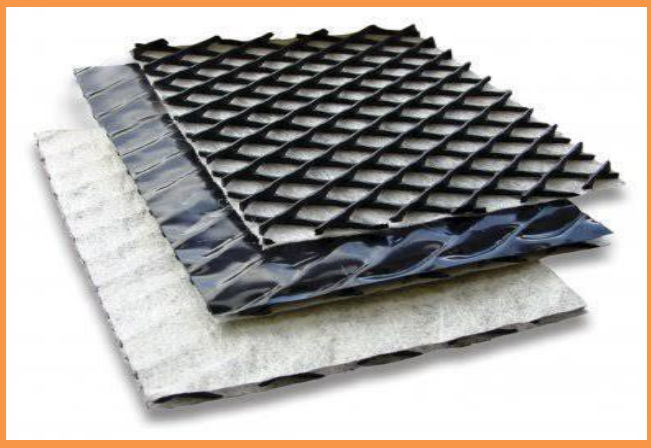
Geosynthetic Testing Parameter

What is Geosynthetic ?

Geosynthetics are man-made materials, often synthetic polymers, used in civil engineering to interact with soil and other materials for various applications. These materials come in different forms like sheets, strips, or three-dimensional structures. They are used for purposes such as soil stabilization, reinforcement, filtration, drainage, and erosion control.



Geocomposite : Geocomposites are engineered materials made by combining two or more geosynthetic materials, like geotextiles, geogrids, geonets, or geomembranes, to create a product with specific



Geotextile : a permeable synthetic fabric used in civil engineering and construction to improve soil stability, drainage, and erosion control.



Geogrid : Geogrids are geosynthetic materials made primarily from polymers like polyester, polypropylene, or polyethylene. They are used in construction, particularly for soil reinforcement and stabilization, due to their ability to distribute loads and enhance the performance of soil structures.



Geostrap : Geostrap is a geosynthetic material used for soil reinforcement in civil engineering projects. It typically consists of high-tenacity polyester yarn tendons encased in a polymer sheath, forming a flat, strap-likstructure. These straps are designed to provide tensile strength and improve the stability of soil structures like retaining walls, slopes, and embankments.



Geocell : Geocells are three-dimensional, cellular structures made of polymeric materials, typically high-density polyethylene (HDPE) or polypropylene (PP), used in civil engineering for soil reinforcement and stabilization. They create a honeycomb-like structure that confines soil or other infill materials, enhancing the load-bearing capacity and preventing soil erosion.



Coir Bhoovastra: a permeable fabric made from coconut coir fibers, used for soil stabilization and erosion control



Cavity Box : Re wall cavity connectors, used in reinforced earth walls.



EPDM Pad : RE Wall EPDM pads are made of Ethylene Propylene Diene Monomer, a synthetic rubber known for its durability, weather resistance, and ability to withstand harsh conditions. These pads are used in Reinforced Earth (RE) walls, specifically between wall panels, to absorb vibrations, distribute loads, and prevent damage from movement and stress.





Testing Machine Photo



Geostrap Tensile Strength



Static Pucture Strength Test (CBR)



Coir Mat Wide Width Tensile Strength



Geomembrane Tensile test

Testing Machine Photo



Geobag Seam Strength



Geogrid Tensile Stregth



Geocomposite Wide Width Tensile Strength



Geocell Peel Strength

Testing Machine Photo



Water Permeability



Direct Shear Machine



Cement test



Triaxial Test Machine



Marsall Stability



Consolidation Test

OUR MAJOR CLIENT

- Hindustan Zinc
- Hindustan Copper Limited
- Vamman Group
- Usta Group
- PTM Group
- Mangalam Group
- Mahima Group
- Debock Group
- Rampura Agucha Mines
- Green Field Agro Park
- PWD (Govt Sector)
- Brijwasi Engineering
- Gravita India Ltd.
- Bhumija Group
- Yadav Mining Industries
- Jaypee Industrial Corporation
- Balaji Kripa

COMPANY DIRECTORS

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INTERNAL AUDITOR

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POSSITION :- M.D/TECHNICAL MANAGER

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NAME :- DEEPAK SHARMA

POSSITION :- M.D/MANAGEMENT HEAD

QUALIFICATION :- B.SC, M.B.A

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