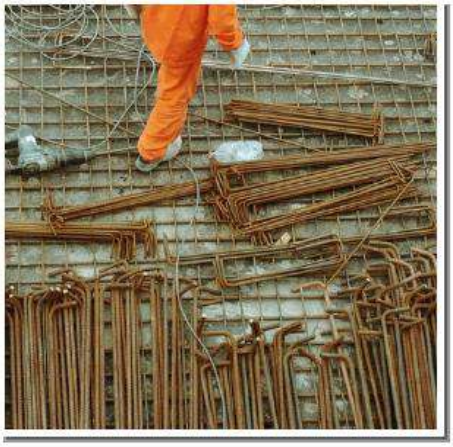
ماتيريال لاب
Material Lab
Testing Services L.L.C. لخدمات الفحص ذ.م.م

Company Profile

Our Services

We offer a wide range of material testing services and solutions to ensure that we are meeting our customer's needs.



Construction Material

Geotechnical and Geophysical Investigation

Environmental and Chemical

Fire Resistance and Reaction to Fire

Special Materials

Structural Assessment and Studies

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Construction Material Testing

Our Construction Material testing division offers physical and mechanical analysis of a comprehensive range of materials to achieve certification by complying with current guidelines and building regulations. The testing are carried out in accordance with International Standards and specifications as defined in BS, ASTM, BS EN, AASHTO, CIRIA, DIN, ISO, local building codes and other applicable standards. Our testing capacity ranges from material sampling, basic material classification tests to advanced material mechanics testing. For larger projects, on-site testing facilities are provided for faster access to critical results.

The core services offered includes testing of Concrete, Soil, Aggregates & Rock, Concrete, Steel & Steel products, Asphalt & Cement.

Concrete

One of the most common construction materials. We conduct testing on fresh and hardened concrete to ensure that desirable concrete properties are achieved. Our highly skilled technicians can sample fresh concrete to perform slump test, air content, bleeding, density and setting time test on site as well as Lab Trial Mix and Plant Trial. The physical characteristics such as compressive strength and water absorption, Transverse Strength, Flexural Strength can be tested for Cubes, Beams, kerbstone, Masonry Blocks, Paving Blocks & Core samples. We also offer durability testing for hardened materials with tests such as Carbon dioxide Diffusion, Initial Surface Absorption Test, Rapid Chloride Penetration and Water Permeability tests which forms a common scope used to determine the longevity of concrete in service. Another area of concern is testing for contaminants such as chlorides and sulphates in hardened concrete.

Soils are an extremely complex matrix to analyse. We do tests such as particle size distribution, compaction, plasticity, and linear shrinkage to provide basic classification of the soil. Other tests such as permeability, chemical constituency of soil including organic and inorganic pollutants can assist with assessing soil suitability for specific projects. We also offer more complex soil testing using state of the art testing equipment to handle consolidation and direct shear testing. The main tests performed in the field include compaction control tests, in-situ CBR, plate load test and soil resistivity test.

Soil

Aggregates are used in a variety of industries for a range of purposes. The physical properties of the aggregates are determined according to standardized test methods for gradation, particle shape and texture. We perform Los Angeles test, Impact, Soundness, Specific Gravity and Crushing tests that help to decide the suitability of the aggregate for use in pavement construction. Cleanliness and presence of deleterious materials in aggregate is found by conducting chemical tests like sulphate & chloride tests, potential alkali reactivity and organic content test. Cements are classified according to their early and final strength as well as their composition, we test the fineness, soundness, consistency and setting time of cement. Chemical analysis

Aggregate & Cement

Steel is an essential material used in a variety of applications. It is very important to evaluate the chemical composition and mechanical properties to ensure the right grade of steel is used onsite. One of the most common and important tests conducted on steel material is a mechanical properties test that evaluates the material's yield, tensile & elongation properties. The test ultimately indicates the maximum load the material can bear before failure.

Steel

Geotechnical and Geophysical

The lab maintains modern drilling rigs, field and laboratory testing equipment designed for all types of geotechnical investigation purposes according to the latest technologies.

Equipment for geophysical studies, as well as mixers and pumps for grouting purposes, are also available at Material Lab.

Material Lab acquires geotechnical data to prepare analytical models to achieve optimum solutions for our client's requirements. Our Lab is equipped to carry out offshore site investigations for projects ranging in size from small projects in shallow water to large projects in relatively deep water. This is performed using self-propelled, self-elevated jack-up barge and drilling rigs specifically

The geotechnical services include but are not limited to the following activities:

Onshore and offshore geotechnical investigation.

Geotechnical studies for dams, roads, buildings and retaining structures	**Geological surveys including geological and geotechnical mapping**	**Investigation, monitoring and analysis for slope stability**
Electric Cone Penetration Testing (CPTu)	**Pressure meter Testing**	**Packer Permeability Test/ Falling Head Permeability Testing**
Percolation/ Double ring infiltrometer test	**Soil Electrical Resistivity Testing.**	**Topographical/ Bathymetric Survey**
Acoustic Tele viewer Test	**Jean Lutz Drilling Parameters**	**Geophysical studies**
Installation and monitoring of field geotechnical instrumentation	**Consultation on special geotechnical studies**	**Prospecting studies for mining and construction materials**

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Stack Emission Monitoring: Material Lab has advanced facility for monitoring emission in stacks, ducts, chimneys, diesel generators, silos including fugitive in cranks and pipes in accordance with USEPA and local authorities.

Ambient Air Quality Monitoring: Material Lab has facility for monitoring quality of air in workplaces, construction sites, traffic pollution and heavy duty plants using standard methods such as USEPA, ISO and local authorities.

Indoor Air Quality Monitoring: Material Lab has new state of high technology to monitor the quality of air in an enclosed environment such as schools, aircraft, mosques, shopping mall, offices, hospitals, museums using relevant standard methods that complied with local authorities.

Noise Monitoring: Material Lab has facility to monitor noise pollution in the environment such traffic noise, residential and occupational noise at workplace using data logging integrated system to accomplish even the most difficult one.

Lux level Monitoring: We monitor light intensity in schools, offices, hospitals, auditoriums, and a host of others to comply with CIE regulations and local authorities.

Heat Stress Monitoring: Material Lab has facility to monitor heat stress at workplaces using technology designed for UAE mode.

Water Quality Testing: Material Lab is fully equipped for testing of water quality in accordance to APHA, AWWA and local authorities such as DM

Effluent Analysis: We have the latest and advanced facility for testing waste water, solid waste and other industrial effluent in accordance to APHA and ISO standards coupled with relevant local authorities.

Sludge, Residue and Unknowns Analysis

Elemental Trace Analysis

Paint Testing

Soil, Concrete, Aggregate and cement Testing

Environmental and Chemical Testing

Material Lab operates state-of-the-art analytical instruments, tested in accordance to government, regulatory, and industry standards. It is very important to determine the hazards within our environment that can be harmful to people. Material Lab provides market-leading laboratory testing, and monitoring services to tests samples for tracing of chemical compounds and pollutants. Our services cover wide range of industrial companies, environmental consultants, contractors, retailers and government authorities. Our services comprise testing of water, air, soil, waste and other products to assess their quality and impact on health and the environment.

Fire Testing

Material Lab is accredited by EIAC and approved by DCD for resistance and reaction to fire testing. We have the latest equipment and advanced facility to conduct reaction to fire tests in accordance to EN 13501-1 for material classifications from class A1 to class F, as well as resistance to fire in accordance with BS 476 Part 22, EN 1363, EN 1634, UL and various international test standards.

The Single Burning Item (SBI)

A method of test that determines the reaction to fire behavior of building products when exposed to the thermal attack by a single burning item.

The Flooring Radiant Panel Test

Evaluates the propensity of a floor system to spread fire and the smoke development when exposed to intense radiant heat from a gas-fired radiant panel.

Non-Combustibility Test

This test determines the temperature rise, flaming time and mass loss of specimen inserted into the furnace at 750 °C.

Fire Resistance

We have the latest 3x3 m test furnace for the fire resistance test.

Single Flame Source Test

Determining ignitability of building products in the vertical orientation, by direct small flame impingement under zero impressed irradiance.

Ignition Temperature Test

This bench scale standard is often used to measure the response of materials to heat and flame by determining the Spontaneous Ignition

Temperature and the Flash Ignition Temperature of plastics using a hot-air furnace.

Some of the products that can be tested against fire resistance:

Boards, Carpets, Coatings, Coverings ,Doors, Facade, Floorings, Paints, Panels, Partitions, PV cells, Vermiculux, ool, and more.

Special Material Testing

Material Lab is well known in the Middle East region for its unconventional special testing capabilities. In addition to routine construction material testing, Material Lab under take wide range of material testing for quality assurance, quality control and certification purpose. Top certification companies in the region regularly use services of Material Lab for their product certification programs.

Material Lab is well equipped with highly sophisticated and fully computerized machines to carry out various advanced tests on various materials, some of these are listed below:

- Geo-textiles
- Architectural Glass Testing
- Safety Glass testing
- Thermal conductivity / U-value of various materials
- Gypsum Board.
- Marble / Granite.
- Glass Fiber Reinforced Concrete (GRC)
- Water Proofing Membrane.
- Resins
- Plastic products
- Rubber products
- Packaging Materials
- Papers
- Steel Nails,
- Soft / Filler board
- Fabrics
- Wires
- Structural timber e.g. tensile, static bending, compression etc.
- Peel off test on adhesives.
- Safety belts and ropes.
- Safety helmets & Shoes.
- Road marking paint
- Sanitary wares
- Furniture
- Pampers / Napkins

Structural Assessments and Studies

We undertake structural assessment to check the structural integrity and soundness of structures and their components for determining the structural deficiencies that need to be addressed as well as determining potential causes and the extent of structural failures. Our Professional Engineers assess the structural elements ensuring that they will continue to safely perform their intended function. Destructive as well as non-destructive methods are used for assessment of buildings, bridges, tunnels, dams and other industrial structures.

Non-destructive Testing (NDT) consists of a variety of non-invasive inspection techniques used to evaluate material properties, components, or entire process units. Some of the test we offer include Rebound hammer test, Cover meter test, Ultrasonic test, Ground penetrating radar, Impact Echo test & Vibration monitoring. In addition, we can monitor the structural cracks or thermal cracks along with the width and depth measurement. Long term monitoring of structures is also carried out to monitor the behaviour of structures and ensure that they comply with safety requirements.