

## CECB Laboratory Services.....

CECB Laboratory, located in Jawatta, Colombo 05, is a major sub unit of CECB, an institution under the Ministry of Mahaweli Development and Environment.

At CECB Laboratory Services we are equipped to perform traditional laboratory testing for projects in different geographical areas across Sri Lanka. Our highly trained Engineers are more than capable of conducting a range of tests, whether it be soil testing, aggregate testing, concrete testing, cement testing, asphalt testing or testing of clay bricks. Now laboratories are located throughout the country to provide sustainable laboratory testing in Colombo, Digana, Badulla, Monaragala, Anuradhapura, and Galle.

### Contact Us....

#### Main Laboratory - Colombo

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#### Base Laboratories

##### Galle

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## Our Project Laboratories.....

##### Digana

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##### Badulla

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Hand Auguring Work at Karadiyana



Subsurface Exploration Drilling Works



Inspection of Borehole Logs



Tunnel Design Works at Mpanga Hydro Power project, Uganda

## Geology & Geotechnical Investigation Reports

Geology plays an important role in providing input into solving geotechnical challenges. Through understanding the origin, deposition history and fundamental characteristics of the surface and sub-surface materials, we are able to arrive at robust technical solutions far sooner and more economically than using a purely engineered approach. Engineering geological advice is relevant at all phases of project delivery from site study and project planning, through civil engineering design and into forensic works.

### Projects

Geotechnical Investigation of Moragahakanda / Kaluganga Development Project.

Pre-Feasibility Study for Designing Major Roads in Landslide Area.

Geotechnical Investigation & Soil Testing Dambulla-Bakamuna, Kalagahawela Road.

Geotechnical Investigation & Design of IT Park Road, Malabe

Geotechnical Investigation for the Proposed Matara-Kataragama Rail road Extension Project.

Geological & Geotechnical Investigation Works at Mpanga Small Hydropower Project, Uganda -2009.

Geological & Geotechnical Investigation Works at Nyamwamba Small Hydropower Project, Uganda-2010.

Geotechnical Investigation Works at Colombo South Container Terminal Extension Project - 2012.



### Head Office

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## CECB Laboratory Services



## Geotechnical Laboratory ( Soil / Rock / Aggregates )



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## Soil & Aggregate Testing

The soil/earth that we stand on is the one source that holds everything together, from the tiniest plant to the large trees, from the houses we live in, to the skyscrapers and mega structures that we take great pride in creating. Hence the importance of understanding the soil we live on is an essential part in any sort of construction work that is to be carried out.

### Physical Parameters (Soil)

Atterberg Limits (LL, PL) - ASTM D 4318  
Bulk Density - BS 1377 Part 2 : 1990  
California Bearing Ratio (CBR) - ASTM D 1883-87, BS 1377 Part 4 : 1990-2007, AASHTO T 193- 2007  
Crumb Test - ASTM D 6572-06  
Hydrometer Analysis - ASTM D 421 / D 422  
Moisture Content - ASTM D 2216  
Sieve Analysis (Washed) - ASTM D 421 / D 422  
Shrinkage Limit Test - BS 1377 Part 2 : 1990  
Soil Permeability - constant head & falling head Method  
ASTM D 2434, BS 1377 Part 5 : 1990  
Triaxial Permeability - BS 1377 Part 6 : 1990  
Specific Gravity of Soil - ASTM D 854  
Standard/ Modified Proctor Compaction Test - ASTM D 698-78, 1990  
Swelling Test - BS 1377 Part 2 : 1990  
Pinhole Test - BS 1377 Part 5 : 1990, ASTM D 4647-06

### Chemical Parameters (Soil)

pH - BS1377 :Part-3 :1990  
Chloride Content W/A - BS1377 :Part-3 :1990  
Sulphate Content W/A - BS1377 :Part-3 :1990  
Mass Loss on Ignition - BS1377 :Part-3 :1990  
Organic Matter Content - BS1377 :Part-3 :1990  
Carbonate Content - BS1377 :Part-3 :1990

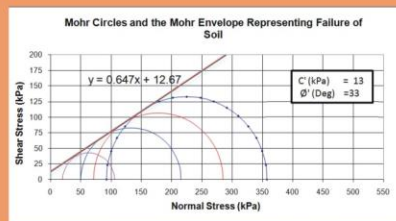


## Advanced Soil/Rock Testing Facility

Projects with great sensitivity to soil / rock behavior increasingly rely on sophisticated testing programs. To address the unique geotechnical design needs of such projects, CECB operates an advanced soil testing Laboratory in Jawatta, Colombo 05. Led by experienced Engineers, this facility is one of the leading geotechnical laboratories in the country. Soil samples from shore and offshore projects around the country are sent to the facility for intricate analysis. High-volume capacity and automated, around-the-clock capabilities promote efficient processing of test data.

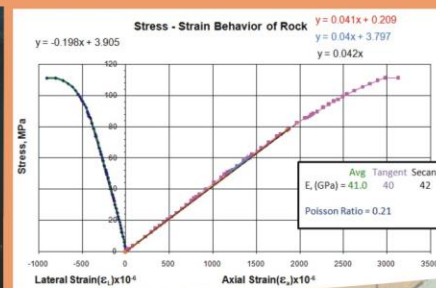
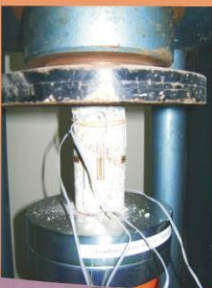
### Shear Strength & Consolidation Parameters of Soil

Consolidation Test - BS 1377 Part 5 : 1990  
C U Triaxial Compression Test (with PWP- 50mm,70mm,100mmØ samples) - BS 1377 Part 7 : 1990  
Direct Shear Test - BS 1377 Part 7 : 1990  
Unconfined Compression Test - ASTM D7012-07  
U U Triaxial Compression Test(Soil) (50mm,70mm,100mm) - BS 1377 Part 7 : 1990



### Shear Strength, Elastic Modules & Poisson's Ratio in Rocks

Rock Triaxial Test -ASTM D 7012-07  
Unconfined Compressive Strength, with poisson's ratio & young's modules- ASTM D 7012-07 & ASTM D 2938-79  
Uniaxial Compressive Strengths- ASTM D 2938 (50mm,70mm,100mm)



## Aggregate Testing

Aggregate Crushing Value - BS 812-110 :Part 1:1975  
Aggregate Impact Value - BS 812-112 : 1990  
Aggregate Soundness Test - ASTM C 88,BS 812:121,AASHTO T-104  
Alkali-Silica Reactivity of Aggregates - ASTM C 289  
Brazilian Test (Soaked/Unsoaked) - ASTM D 3967-08  
Bulk Density of Aggregates  
Clay Lumps & Friable Particle - ASTM C 142-97  
Clay Silt & Dust Content - BS 812 : Part 1 : 1975  
Chloride Content (Water/Acid Soluble)- BS 812 :117  
Sulphate Content (Water/Acid Soluble) - BS 812 :117  
Elongation Index - BS 812 : Part 105  
Flakiness Index - BS 812-105.2 : 1990  
Los Angeles Abrasion Value Test - ASTM C 131-06  
Point Load Index - ASTM D 5731-08  
Organic Impurities of Aggregates - ASTM C 40  
Rock fill Max./Min. Density - ASTM C 29 - 29M  
Sand Vibration Proctor (Single Point) - BS 1377 : part 4 : 1990  
Sieve Analysis(Unwashed) - BS 882 : 1992  
Slake Durability Test - ASTM D 4644  
Specific Gravity & Water Absorption- ASTM C 127-07



### Insitu Soil Testing & Sampling

Disturbed Sampling  
Undisturbed Sampling  
Augur Boring up to 5m  
Field Density - ASTM D 1556-82  
Plate Bearing Test - ASTM D 1194-94  
Dynamic Cone Penetration - ASTM D 6951 / D 6951 M  
Field CBR - ASTM D 4429  
Insitu Density Test  
Standard Penetration Test

