

# COMPANY PROFILE

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## 1. INTRODUCTION

The company has its origins as a civil engineering firm that operated in East London in the mid 1960's. This included a testing laboratory and it was decided, for various reasons, that this element should be discarded and set up as an entity operating independently. Thus, the seeds were sewn for what was to eventually become (in April 1990) Controlab and the name has not been changed since.

Controlab's Head Office is situated at 1 Alfred Road, Vincent (East London) with the main laboratory situated at 10 St Pauls Road, North End (East London) with branch laboratories in Mthatha, Kokstad and Cape Town (under the name Geoscience Laboratories (Pty) Ltd). We have also recently opened a sister laboratory in Zambia (see **Annexure C** for further details).

Controlab is affiliated to a number of companies; namely a recruitment consultancy and a civil engineering and project management (incorporating environmental management) consultancy. A brief overview of these companies is attached as **Annexure C**.

## 2. SERVICES

Controlab is a specialist testing company, catering for the civil, geotechnical and structural engineering fraternity. It offers a full range of testing services of soils, aggregates, bitumen, asphalt, concrete and geotechnical investigations for, amongst others, new roads, borrowpits, road rehabilitation, gravel roads, township developments, buildings and structures. We have had field laboratories on various projects nationally.

A brief list of our clients and projects in which we have been involved in the past few years are attached at **Annexure A** hereto.

Our Company has also previously monitored the Eastern Cape Government Provincial Laboratories in the absence of other qualified personnel.

In February 2008, we achieved our SANAS accreditation (ISO/IEC 17025) for the laboratory (reference number T0308). The tests for which we have been accredited for are as follows:

TEST DESCRIPTION	TEST METHOD
Sieve analysis to 75 microns and Atterberg limits	TMH 1 A1; A2; A3; A4 (1979); A5
MOD AASHTO moisture density relationship	
a) Natural	TMH 1 A7
CBR - Natural	TMH 1 A8
CBR - Stabilised	TMH 1 A9
Unconfined compressive strength: curing and crushing	TMH 1 A14
Indirect tensile strength: compacting, curing, crushing	TMH 1 A16T
Compaction control - sand replacement	TMH 1 A10 (a)

TEST DESCRIPTION	TEST METHOD
Compaction control - nuclear gauge	TMH 1 A10 (b)
Aggregate crushing value	TMH1 B1 Ref SABS 841
10% fine aggregate crushing value (FACT)	TMH1 B2 Ref SABS 842
Flakiness index	TMH 1 B3T Ref SABS 847
Sieve analysis of coarse aggregates	TMH 1 B4 Ref SABS 829
Sieve analysis of fine aggregates	TMH 1 B4 Ref SABS 829
Bulk density of coarse and fine aggregates	TMH 1 B9 Ref SABS 829
Relative density	TMH 1 B14; B15
Manufacturing, curing and compressive strength concrete cubes	TMH1 D1
Slump test	TMH 1 D3
Marshall stability and flow on briquettes supplied	TMH 1 C2
Asphalt bulk relative density	TMH 1 C3
Indirect tensile strength asphalt	TMH 1 C12 T
Maximum theoretical relative density (Rice's method)	TMH 1 C4 (a)
Binder content	TMH 1 C7 (b)
Sampling – from a natural gravel pit	TMH 5 MA2
Sampling – from stockpile, binders, asphalt, slurry mix, fresh concrete and treated layers	TMH 5 MB1, MB4, MB7, MB8, MB9, MB10
Sampling of road pavement layers	TMH 5 MC1
Drilling from a concrete or asphalt layer	TMH 5 MC2
Division of samples using a riffler and by quatering	TMH 5 MD1, MD2

For a full range of testing services provided by Controlab, kindly refer to **Annexure D** attached.

### 3. OUR PHILOSOPHY

Our company is totally committed to maintaining the high technical standards within the civil engineering materials field and therefore have assisted the Walter Sisulu University of Technology (previously the Eastern Cape Technikon and Border Technikon) by making available our laboratory facilities and staff for practical laboratory experiments. We have served on the advisory committee for the Water Sisulu University of Technology and were awarded a certificate of recognition by them in June 2009. We also employ students for experiential training as required by such institutions.

Training for our staff consists of in-house training and the testers' courses offered by the Society for Asphalt Technology. These courses are run from our laboratory and premises.

From a social standing as a company, we feel strongly about poverty alleviation and assist with these projects whenever possible by offering free technical advice and testing. One such recent project was the establishment of a block making operation on the Van Der Liej Pilot Housing Project.

## 4. PERSONNEL

As a company, we are also committed to an affirmative policy and believe in the upliftment of previously marginalized individuals. Our company consists of a staff compliment of 166 individuals, which is broadly divided into the following categories:

Job Title	Number of Persons Employed
Professional Materials Technologist	1
Quality Assurance Managers	1
Laboratory Managers	15
Senior Materials Technicians	20
Materials Testers	34
Technical Assistants	37
Laboratory Assistants	28
Labourers	15
Administrative Staff	15

Detailed curricula vitae of our key personnel is available upon request. However, a brief outline is as follows:

**Marinus Louis Proudfoot** is the Managing Director and a registered Professional Engineering Technologist with the Engineering Council of South Africa and a Registered Engineer with the Engineering Institute of Zambia. He has more than 30 years experience in the materials engineering and geotechnical field. He is a member of the Institute of Professional Engineering Technologists, The Chamber of Engineering Technology, Concrete Society of Southern Africa, the Society for Asphalt Technology, the South African Institute of Civil Engineering and the South African Institute for Engineering and Environmental Geologists.

**Chris Becker** is the Quality Assurance Manager. His responsibilities focus around the implementation, maintenance and continual improvement of the quality assurance within both the commercial and site laboratories.

**Deon Louw** is the Technical Manager and has a Master of Science (MSc) degree from the University of Pretoria. He has worked in the material engineering and construction supervision fields for over 15 years. He is a registered Professional Engineering Technologist with the Engineering Council of South Africa. He is also a member of the Institute of Professional Engineering Technologists and the Society for Asphalt Technology.

**John Atterbury**, who has more than 40 years experience, is the Geotechnical Engineer and has a Diploma in Civil Engineering.

**Phillip van Heerden** is our International Operations Manager who has a number of years experience in the consultancy/management field.

These key personnel are supported by a number of experienced laboratory managers - most of which are registered with the Engineering Council of South Africa working under the control of a Professional Technologist.

**Annexure B** hereto lists the breakdown of our complete staff by profession and ethnicity respectively.

## ANNEXURE A

### CLIENTS AND PROJECTS COMPLETED

We have had field laboratories on various projects for a number of years where the notable clients were as follows:

- Eastern Cape Provincial Administration
- SA National Roads Agency Ltd (SANRAL)
- Western Cape Provincial Administration
- Department of Roads and Public Works
- Department of Transport
- Department of Housing, Local Government and Traditional Affairs

Some of the more notable projects which are in various stages are as follows:

Project	Client
N10 Cookhouse to Middleton	SANRAL (complete)
DR08257 Idutywa to Engcobo	Department of Public Works (complete)
Upgrading of Provincial Roads between Ugie & Langeni (Phase 1)	Department of Public Works (complete)
R34 between Kroonstad and Welkom (Eastern Region)	SANRAL (complete)
Contract C377.11 Trunk Road 1, Section 1, George	Department of Public Works, Western Cape (complete)
Contract DR08292 - Mthatha	Department of Public Works, Eastern Cape (complete)
Upgrading of District Road DR08022 from N2 to Sulenkama	Department of Roads & Transport (February 2009)
Upgrading of District Road DR08218 from Langeni Sawmill to R61 (Phase 3)	Department of Roads & Transport (presently ongoing)
Special Maintenance & Re-Seal of National Route R61 from N6 to Provincial Road T253	SANRAL (presently ongoing)
Rehabilitation of National Route 2, Section 10, Gamtoos River to Van Stadens River	SANRAL (presently ongoing)
Assmang Iron Ore Mine, KEP Phase 1, Sishen	Khumani Iron Ore Mine (December 2008)
Rehabilitation of National Route 2 Section 19 between Mthatha and Nqadu Forest	SANRAL (October 2009)
Mthatha 2010 Sports Stadium	Department of Public Works, Eastern Cape (February 2009)
Greenville Hospital Access Road: Provision of Laboratory Services	Department of Public Works, Eastern Cape (March 2010)
Assmang Iron Ore Mine, KEP Phase 2, Sishen	DRA Mineral Projects (presently ongoing)
Borrowpit Investigation and Assessment for the Eastern Cape	Department of Roads and Public Works (presently ongoing)
Rehabilitation of N6 between Ezibeleni and JJ Serfontein	SANRAL (presently ongoing)
Centreline Investigation of the Proposed Bus Routes in the Buffalo City Municipality	Buffalo City Municipality (March 2011)

Some of the clients in the private sector for which road, borrow pit and geotechnical investigations have been carried out are listed as follows:

- Aurecon Group
- Arcus Gibb (Pty) Ltd
- Bigen Africa Consulting Engineers
- Grinaker LTA Building Cape
- HHO Africa
- Haw & Inglis Civil Engineering (Pty) Ltd
- Iliso Consulting Engineering (Pty) Ltd
- Lukhozi Consulting (Pty) Ltd
- Masuku Dube Tifflin (Pty) Ltd
- Rumdel Construction (Cape) (Pty) Ltd
- Sigodi Marah Martin
- SSI
- UWP Consulting Engineers (Pty) Ltd



## ANNEXURE B

### BREAKDOWN OF COMPLETE STAFF COMPLEMENT

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<b>Race</b>	<b>No.</b>	<b>Percentage (%)</b>
European Men	17	10.2
European Women	10	6.0
Asian Men	3	1.8
Asian Women	1	0.6
Coloured Men	10	6.0
Coloured Women	0	0
African Men	94	56.7
African Women	31	18.7
	166	100

Of the previously marginalized personnel, eight are on a senior level.

Our Black Economic Empowerment status at present is 49%.

## ANNEXURE C

### AFFILIATED COMPANIES

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#### **Controlab Zambia Ltd**

Controlab in South Africa identified the need for organic growth and through research highlighted Zambia as a fast developing country where our expertise was a necessity. Controlab Zambia Ltd was officially opened in March 2010 as a civil engineering materials and geotechnical testing commercial laboratory in Lusaka, Zambia.

The company is equipped to undertake all forms of testing for the civil engineering and geotechnical fields. These include soils, aggregates, bitumen, asphalt, concrete and geotechnical investigations for a variety of civil projects.

The facility is managed by a highly qualified engineer from South Africa who in turn has employed and is training Zambian nationals over a period of time to progress within the industry.



#### **CONTROL RECRUITS (PTY) LTD**

Control Recruits is an independent, young, dynamic technical and engineering recruitment consultancy providing permanent recruitment solutions for companies within the engineering and technical industries.

Control Recruits has experienced individuals who have past experience within the engineering, technical and recruitment industry. This enables us to have a strong understanding of the core skills that are required by our clients.

We offer a professional and honest service which is a tailor-made recruitment solution for our clients. We will manage the whole recruitment process for you – right from taking the vacancy, advertising and short listing of suitable candidates through to arranging of interviews.



## Control Civil Services cc

CONTROLLING RISK ON PROJECTS

Control Civil Services cc was started in November 2006 as a civil services consultancy aimed at controlling risk on civil projects. This has proven to be a vital and much needed aspect on any related project (specifically in the Eastern Cape) and, through the professional staff employed, the company aims to alleviate this services shortage.

Control Civil Services cc is based in East London and, through our association with Controlab, we are able to provide our services throughout the Eastern Cape.

Through the wealth of knowledge provided by our staff, we are able to offer additional services relating to project management, road and pavement design as well as geotechnical reporting.

Some of the services Control Civil Services can provide are: ensure that budget controls are in place, the quality of the work provided adheres to the specifications as well as the expectation of the Client, ensure that time frames agreed upon are achieved, to assist and evaluate projects in the transportation sector, compilation of geotechnical reports (including centerline investigations and borrow pit investigations for road projects to foundation investigations for developments and building projects).



Geoscience Laboratories (Pty) Ltd was opened in May 1962 as an independent geotechnical and civil engineering test facility based in Cape Town. Today, it is one of the leading geotechnical laboratories in Southern Africa providing a full range of testing and inspection services on soils, aggregate, asphalt, concrete and associated products.

Geoscience provides control testing for the construction of civil projects as well as specialized testing for dams and waste disposal sites. We conduct geotechnical and soils testing for all geotechnical investigations.

Field and laboratory testing is undertaken to South African and international testing standards.

# ANNEXURE D

## SUMMARY OF TESTING SERVICES

COMPACTION CONTROL	TEST METHOD
In Place Dry Density and Moisture Content	
Sand Replacement	A10(a)
Nuclear Gauge	A10(b)
Dynamic Cone Penetrometer	ST6
SOILS AND GRAVELS	TEST METHOD
Sieve Analysis to 75 Microns	A1,A5
Sieve Analysis including Analysis of Soil Fines	A1,A5
Hydrometer Analysis of Soil Fines	A6,ASTM D422
Atterberg Limits	A2,A3 & A4
Atterberg Limits (Stabiliser Material)	
Sieve Analysis to 75 Microns, Analysis of Soil Fines and Atterberg Limits	A1,A2,A3,A4 & A5
Sieve Analysis, Hydrometer Analysis & Atterberg Limits	A1,A2,A3,A4,A5, ASTM D422
Moisture Content	
MOD A.A.S.H.T.O. Moisture Density Relationship	
Natural	A7
Stabilised	A8
CBR Procedure Only (excluding 4.8)	
Natural	A8
Stabilised	A9
Unconfined Compressive Strength Test - Compaction, Curing, Crushing a set of 3 briquettes (excl. 4.8)	A14
Crush Unconfined Compressive Strength	
Unconfined Compressive Strength Design (1 stabilisation point)	
Wet / Dry Durability Test on 150mm diameter	
Soil / Cement Specimens (excluding 4.8)	A19
pH Value	A20
Compactibility	
Relative Density	
Indirect Tensile Strength - Compaction, Curing & Crushing a set of 3 briquettes (excluding 4.8)	A16T
Five Cycle Wet & Dry Weathering Test (Venter)	COLTO
Dispersivity - Double Hydrometer	ASTM D4221
Insitu Permeability (Marvel)	COLTO
Ball Mill Test	CSIR TR RP/31
AGGREGATES	TEST METHOD
* Aggregate Crushing Value	SABS 841 B1
* 10% Fine Aggregate Crushing Value (FACT)	SABS 842 B2
Dry Value	
Wet Value	
* Samples prepared from cores or oversize aggregates (extra R41.00/sample)	
Flakiness Index	SABS 847 B3T
Sieve Analysis of Coarse Aggregates	B4
Sieve Analysis of Fine Aggregates	B4
Organic Impurities in Sand for Concrete (Colour)	SABS 832 B6
Organic Impurities in Sand (Quantitative)	
Treton Impact Value of Aggregates	B7

<b>AGGREGATES (continued)</b>	<b>TEST METHOD</b>
Bulk Density of Coarse & Fine Aggregates	B9
Relative Density	B14 & B15
Average Least Dimension	B18(a)
Average Least Dimension	B18(b) T
Sand Equivalent	SABS 838 B19
Water Demand of Fine Aggregates for Concrete	SABS 835
Water Soluble Salts	B16T
Water Soluble Sulphates	B17T
Los Angeles Abrasion	SABS 846
Water Absorption Fine Aggregates	B15
Water Absorption Coarse Aggregates	B14
Soundness Test	SABS 839
5 Cycle	
15 Cycle	
20 Cycle	
Loose / Compacted Bulk Density	B9
Bulking Curve	
Modified Tray Test	
Polished Stone Value	SABS 11
Unconfined Compressive Strength of Rocks	
Point Load Test Cores	
Methylene Blue Absorption	
<b>CHEMICAL TESTING</b>	<b>TEST METHOD</b>
Presence of Sugar in Water / Sand for Concrete	SABS 833
Initial Lime Demand	
Determination of Stabiliser Content	A15(d)
Calibration Curve (E.O. 6.3)	
Durability : Ethylene Glycol	NPA
pH for Water	
pH for Soil Paste	
Conductivity of Water	
Conductivity of Soil Paste	
Presence of Ammonia in Water	
Chloride Content Sand (% w/w)	SABS 830
Sulphate Content (% w/w)	SABS 212
Sodium Content	
Organic Impurities Water Chemical Oxidation	
Suitability for drinking water	
Solubility in Acid	
Solubility in Water	
Soluble Magnesium	
Presence of Oils	
Soil Fertility	
Soil Parameters	
<b>CONCRETE</b>	<b>TEST METHOD</b>
Curing & Crushing of Concrete Cubes	SABS 863 D1
Manufactured Cubes, Cure and Crush (excl. est.)	SABS 863 D1
Concrete Mix Design, including Quality (Testing of Aggreg)	
Theoretical Concrete Mix Design	
Theoretical Concrete Mix Design plus	
quality testing of aggregates	
Additional Theoretical Mixes (extra over 7.3(a),(b) & (c))	
Mortar / Blocks Mix Design	
Concrete Trial Mix	
Slump Test (excluding establishment)	D3
Shrinkage of Concrete	SM1085
Schmidt Hammer (15 impacts per site)	
(excluding Personnel & Transport)	
Flexural Strength of Concrete Beams	SM 864
Manufacture Beams, Cure and Crush (excl. est.)	SM 864
Crush Bricks / Pavers	SABS 227

<b>CONCRETE (continued)</b>	<b>TEST METHOD</b>
Uncapped	
Capped	
Prepare and Crush Paving Blocks	SABS 1058
Crush Cores (capped)	SABS 865
Crush Building Block (Capped)	SABS 1215
Crush Building Blocks (Uncapped)	
Water Absorption (Bricks)	
Rain Penetration Test	SABS 0400
Suitability of water for use in Concrete	
Aggregate : Cement Ratio	
Reinforcing : Tensile Properties (3 bars)	SABS 920 -1985
Measurement Bricks / Blocks only	
Modulus of Rapture (brick / paver)	
Bre Screed Test	
Concrete Durability Tests	
Oxygen Permeability	
Water Sorptivity	
Chloride Conductivity	
Fluidity Test: Grout	
Soluble Deleterious Impurities	SABS 1090
<b>ASPHALT</b>	<b>TEST METHOD</b>
Marshall Stability and Flow on Briquettes supplied	C2
E.O. above for preparation of Briquettes	
Bulk Density	C3
Maximum Theoretical Density (Rice's Method)	C4(a)
Bituminous Binder Absorbed by Aggregate	C4(b)
Voids and Density Analysis	C3,C4(a)
Immersion Index of Bituminous Mixture (excl. 8.1.1)	C5
Bitumen Content	C7(b)
Bitumen Content & Sieve Analysis	B4,C7(b)
Adhesion of Bitumen to Aggregate (Riedel & Weber)	B11
Complete Marshal Analysis (excl. 8.1.1)	B4,C7(b),C2,C3,C4(a)
Marshall Mix Design (excl. 8.6)	C1
Slurry Design	
Recovery of Asphalt (Abson) (excl. 8.7 & 8.10)	ASTM D1856
Texture Depth	ST1
Ball Penetration Test	ST4
Static Creep (Bitutek)	C6T
Dynamic Creep	BROWN, COOPER
Indirect Tensile	C9(a) T
Calculation of Spray Rates	DRAFT TRH3
Air Permeability	TRH8 APP C
Air Permeability per Asphalt Design	
ETB Design	SABITA Manual 21
Slurry Mix Design	
<b>BITUMEN</b>	<b>TEST METHOD</b>
Penetration Value of Bitumen	E1
Softening point	ASTM D36
Storage Stability	SABITA MANUAL 15
Ductility	DIN 52013
Water Content	E17
Spot Test	(SRT TMA1)
Viscosity Saybolt Furol	SABS 548
Binder Content	E17
Coagulation Value when mixed with Portland Cement	SABS 309
Residue on Sieving	ASTM D244
Sedimentation	SABS 309
Brookfield Viscosity	ASTM D4402
Elastic Recovery	SABITA MANUAL 15
Vialit Adhesion @ 5 & 50°C	SABITA MANUAL 15

<b>FOUNDATION</b>	<b>TEST METHOD</b>
Consolidation Test (Voids Ratio/Pressure Relationship)	ASTM D2435
Double Oedometer	ASTM D2435
Permeability (excl. Moisture Density Relationship)	KH HEAD VOL 2
Tri-axial Test	ASTM D4767
Shear Box	ASTM D3080
NHBRC Classification - B3	
<b>NHBRC Classification - B3 - Special Rates (5 sites or more at one time)</b>	
NHBRC Classification - B1/1	
Percolation Insitu	SABS 0400
Pin Hole Test	ASTM D4221 - 90
Collapse Potential	ASTM D5333
Swelling Pressure	ASTM D4546
Free Swelling Test	ASTM D4546
Plate Load Test	
<b>CORING</b>	<b>TEST METHOD</b>
Coring (Asphalt)	
Coring (Concrete)	
Coring (Reinforced Concrete)	
Coring Concrete 300 diameter upwards	
Hand Auger	
<b>MATERIALS INVESTIGATION</b>	
Quotations for centreline and quarry investigations will be given on request	
<b>SIEMIC INVESTIGATION</b>	
Quotations will be given on request	
<b>BENKELMAN BEAM DEFLECTION TEST</b>	
Quotations will be given on request	
<b>ON SITE LABORATORIES</b>	
These laboratories will be staffed and equipped as the Public Works/SANRAL requirements	
<b>STRUCTURAL</b>	
Impact Tests and Impact Resistance Criteria (NHBRC Standards and Guidelines)	
Sandbag Impact Test	NHBRC
Steel Tool Test (Hard Body Impact)	NHBRC
Test for Heavyweight	NHBRC
Test for Shelving	NHBRC