

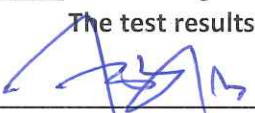
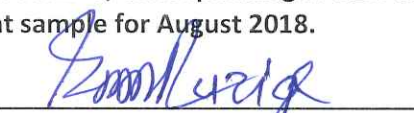


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 05/10/2018

CERTIFICATE OF CHEMICAL & PHYSICAL TESTS
(SIMBA Brand Portland Composite Cement)

Sampled and tested in accordance with the requirements of Tanzania Bureau of Standards 'No. TZS 760 : 2002''

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1:2002 = EN 197-1:2000 CEM II/B-M 32.5N
CHEMICAL TESTS:		
Loss on Ignition (%)	13.30	
SiO ₂ (%)	18.11	
Al ₂ O ₃ (%)	4.08	
Fe ₂ O ₃ (%)	3.63	
CaO (%)	57.57	
MgO (%)	0.77	5.0 Max.
SO ₃ (%)	2.13	3.5 Max.
K ₂ O (%)	0.14	
Na ₂ O (%)	0.07	
Cl (%)	0.01	0.1 Max
Total (%)	<u>99.51</u>	
C3A (%)	6.30	
Freelime (CaO _f) (%)	2.28	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4330	
Compressive Strength (N/mm ²): ISO	2days	-
	7days	≥16 N/mm ²
	28days	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	80	≥75 Minutes
Final setting (minutes)	180	-
Expansion (Lechatelier's) (mm)	1.0	10 Max.
REMARKS: The average temperature during the test did not exceed 22°C; corresponding to 71.6°F. The test results shown are monthly composite cement sample for August 2018.		
 PLANT MANAGER	 QUALITY ASSURANCE MANAGER	



TANGA CEMENT PLC

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Directors:

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P de Jager (CFO)**, K. Omar~, Rob Wessels#**, T. Wagner#**, R. Mbilinyi~

Company Secretary:

Quresh Ganijee

**South African,

~ Independent Non-executive

Non-executive

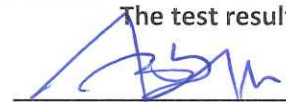
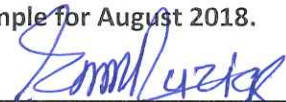


SIMBA
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STRENGTH WITHIN

DATE: 05/10/2018

CERTIFICATE OF CHEMICAL & PHYSICAL TESTS (SIMBA Brand Portland Composite Cement)

Sampled and tested in accordance with the requirements of Tanzania Bureau of Standards 'No. TZS 760 : 2002''

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1:2002 = EN 197-1:2000
CHEMICAL TESTS:		CEM II/B-M 32.5R
Loss on Ignition (%)	7.51	
SiO ₂ (%)	21.46	
Al ₂ O ₃ (%)	5.20	
Fe ₂ O ₃ (%)	3.97	
CaO (%)	58.39	
MgO (%)	1.37	5.0 Max.
SO ₃ (%)	1.91	3.5 Max.
K ₂ O (%)	0.17	
Na ₂ O (%)	0.07	
Cl (%)	0.01	0.1 Max
Total (%)	<u>99.99</u>	
Insoluble Residue (IR) (%)	5.44	
C3A (%)	7.07	
Freelime (CaO _f) (%)	1.99	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4703	
Compressive Strength (Mpa): ISO 2days	13.6	≥10 N/mm ²
ISO 7days	24.5	-
ISO 28days	41.7	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	80	≥75 Minutes
Final setting (minutes)	180	-
Expansion (Lechatelier's) (mm)	2.0	10 Max.
REMARKS: The average temperature during the test did not exceed 22°C; corresponding to 71.6°F.		
The test results shown are monthly composite cement sample for August 2018.		
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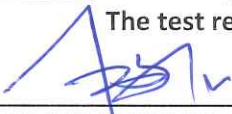
CERTIFICATE OF CHEMICAL & PHYSICAL TESTS
(SIMBA Brand Portland Limestone Cement)

Sampled and tested in accordance with the requirements of Tanzania Bureau of Standards 'No. TZS 760 : 2002''

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1:2002 = EN 197-1:2000
CHEMICAL TESTS:		CEM II/A-L 42.5N
Loss on Ignition (%)	9.98	
SiO ₂ (%)	18.91	
Al ₂ O ₃ (%)	4.49	
Fe ₂ O ₃ (%)	3.03	
CaO (%)	60.22	
MgO (%)	0.75	5.0 Max.
SO ₃ (%)	2.18	3.5 Max.
K ₂ O (%)	0.12	
Na ₂ O (%)	0.08	
Cl (%)	0.01	0.1 Max
Total (%)	99.76	
Insoluble Residue (IR) (%)	4.58	
C3A (%)	9.78	
Freelime (CaO _f) (%)	2.15	
PHYSICAL TESTS:		
Air permeability - Blaine (m ² /kg)	4283	
Compressive Strength (Mpa):	ISO 2days	≥10 N/mm ²
	ISO 7days	-
	ISO 28days	≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	90	≥60 Minutes
Final setting (minutes)	190	-
Expansion (Lechatelier's) (mm)	1.0	10 Max.
Specific gravity (g/cc)	3.0	

REMARKS: The average temperature during the test did not exceed 22°C; corresponding to 71.6°F.

The test results shown are monthly composite cement sample for August 2018.


PLANT MANAGER


QUALITY ASSURANCE MANAGER



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