

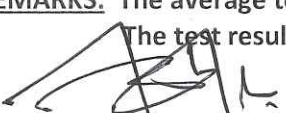
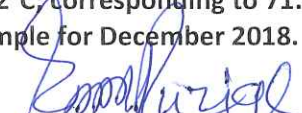


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 08/02/2019

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 (%)		5.841	
SiO ₂ (%)		23.63	
Al ₂ O ₃ (%)		5.53	
Fe ₂ O ₃ (%)		4.75	
CaO (%)		55.93	
MgO (%)		1.11	5.0 Max.
SO ₃ (%)		2.03	3.5 Max.
K ₂ O (%)		0.23	
Na ₂ O (%)		0.06	
Cl (%)		0.01	0.1 Max
Total (%)		99.78	
Insoluble Residue (IR) (%)		6.01	
C3A (%)		6.63	
Freelime (CaO _f) (%)		2.24	
PHYSICAL TESTS:			
Air permeability - Blaine (cm ² /g)		4509	
Compressive Strength (Mpa):	ISO 2days	12.1	≥10 N/mm ²
	ISO 7days	23.8	-
	ISO 28days	39.0	≥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 December 2018.			
			
PLANT MANAGER		QUALITY ASSURANCE MANAGER	



TANGA CEMENT PLC

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Directors:

L Masha~ (Chairperson), P Rutabanzibwa~ (Deputy Chairperson), R Swart (Managing)**,
P de Jager (CFO)**, K Omar~, Rob Wessels#**, T Wagner#**, R Mbilinyi~

Company Secretary:

Quresh Ganijee

**South African, ~ Independent Non-executive # Non-executive



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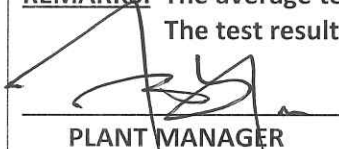
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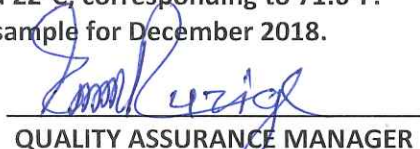
CERTIFICATE OF CHEMICAL & PHYSICAL TESTS (SIMBA Brand Portland Limestone Cement)

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 (%)	8.32	
SiO ₂ (%)	19.21	
Al ₂ O ₃ (%)	4.57	
Fe ₂ O ₃ (%)	3.05	
CaO (%)	62.08	
MgO (%)	0.75	5.0 Max.
SO ₃ (%)	1.97	3.5 Max.
K ₂ O (%)	0.10	
Na ₂ O (%)	0.06	
Cl (%)	0.01	0.1 Max
Total (%)	<u>100.11</u>	
Insoluble Residue (IR) (%)	4.59	
C3A (%)	6.96	
Freelime (CaO _f) (%)	2.12	
PHYSICAL TESTS:		
Air permeability - Blaine (m ² /kg)	4263	
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 December 2018.


PLANT MANAGER


QUALITY ASSURANCE MANAGER



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