

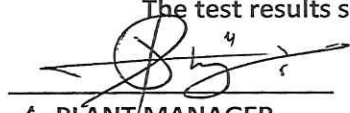
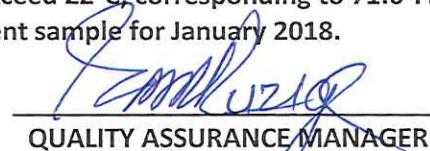


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 12/03/2018

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 32.5N
Loss on Ignition (%)		11.61	
SiO ₂ (%)		17.74	
Al ₂ O ₃ (%)		3.90	
Fe ₂ O ₃ (%)		3.05	
CaO (%)		59.04	
MgO (%)		2.01	5.0 Max.
SO ₃ (%)		2.08	3.5 Max.
K ₂ O (%)		0.04	
Na ₂ O (%)		0.18	
Cl (%)		0.01	0.1 Max
Total (%)		99.66	
C3A (%)		4.78	
Freelime (CaO _f) (%)		1.97	
PHYSICAL TESTS:			
Air permeability - Blaine (cm ² /g)		4949	
Compressive Strength (N/mm ²): ISO 2days		10.7	-
ISO 7days		24.9	≥16 N/mm ²
ISO 28days		35.1	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)		90	≥75 Minutes
Final setting (minutes)		210	-
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 January 2018.			
 PLANT MANAGER		 QUALITY ASSURANCE MANAGER	



TANGA CEMENT PLC

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Dr. S. Olivier**, T. Wagner**, P. Rutabanzibwa*, R. Mbiliyi*

Company Secretary:

Quresh Ganjee*

*Tanzanian, **South African

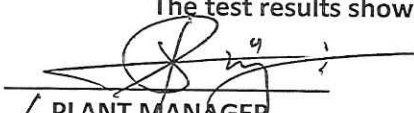
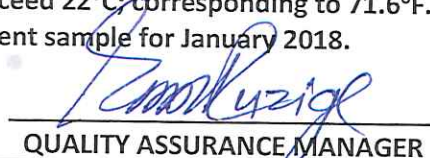


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 12/03/2018

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 (%)		5.24	10 max (Plant limit)	
SiO ₂ (%)		25.62		
Al ₂ O ₃ (%)		5.78		
Fe ₂ O ₃ (%)		5.29		
CaO (%)		52.51		
MgO (%)		2.52	5.0 Max.	
SO ₃ (%)		2.11	3.5 Max.	
K ₂ O (%)		0.16		
Na ₂ O (%)		0.17		
Cl (%)		0.01	0.1 Max	
Total (%)		99.41		
Insoluble Residue (IR) (%)		5.47	6 max (Plant limit)	
C3A (%)		6.38		
Freelime (CaO _f) (%)		1.77		
PHYSICAL TESTS:				
Air permeability - Blaine (m ² /kg)		4336		
Compressive Strength (Mpa):	ISO 2days	11.2	≥10 N/mm ²	
	ISO 7days	22.8	-	
	ISO 28days	38.6	≥32.5 N/mm ² ; ≤52.5 N/mm ²	
Vicat test: Initial setting (minutes)		100	≥75 Minutes	
Final setting (minutes)		230	-	
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 January 2018.				
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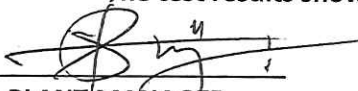
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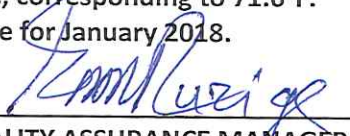
CERTIFICATE OF CHEMICAL & PHYSICAL TESTS (SIMBA Brand Portland Limestone Cement)

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 (%)	8.49	
SiO ₂ (%)	19.46	
Al ₂ O ₃ (%)	4.31	
Fe ₂ O ₃ (%)	3.17	
CaO (%)	60.01	
MgO (%)	2.13	5.0 Max.
SO ₃ (%)	1.83	3.5 Max.
K ₂ O (%)	0.05	
Na ₂ O (%)	0.18	
Cl (%)	0.01	0.1 Max
Total (%)	99.64	
Insoluble Residue (IR) (%)	4.82	
C3A (%)	6.06	
Freelime (CaO _f) (%)	1.99	
PHYSICAL TESTS:		
Air permeability - Blaine (m ² /kg)	4329	
Compressive Strength (Mpa):	ISO 2days	14.5
	ISO 7days	29.4
	ISO 28days	44.1
		≥10 N/mm ²
		-
		≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	100	≥60 Minutes
Final setting (minutes)	210	-
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 January 2018.


PLANT/MANAGER


QUALITY ASSURANCE MANAGER



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