


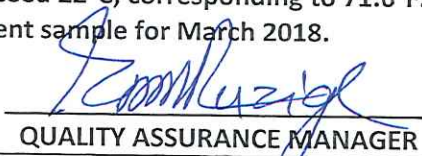


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 03/05/2018

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 (%)	10.58	
SiO ₂ (%)	18.71	
Al ₂ O ₃ (%)	4.16	
Fe ₂ O ₃ (%)	3.40	
CaO (%)	58.05	
MgO (%)	2.20	5.0 Max.
SO ₃ (%)	2.24	3.5 Max.
K ₂ O (%)	0.06	
Na ₂ O (%)	0.17	
Cl (%)	0.01	0.1 Max
Total (%)	99.58	
Insoluble Residue (IR) (%)	5.623	
C3A (%)	5.28	
Freelime (CaO _f) (%)	2.17	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4683	
Compressive Strength (Mpa):	ISO 2days	11.8
	ISO 7days	23.2
	ISO 28days	39.5
		≥10 N/mm ²
		-
		≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	100	≥75 Minutes
Final setting (minutes)	200	-
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 March 2018.		
 PLANT MANAGER	 QUALITY ASSURANCE MANAGER	



TANGA CEMENT PLC

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Directors:

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

Company Secretary:

Quresh Ganijee*

*Tanzanian, **South African



SIMBA
CEMENT
STRENGTH WITHIN

DATE: 04/05/2018

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 CEM II/A-L 42.5N
CHEMICAL TESTS:			
Loss on Ignition (%)	8.66		
SiO ₂ (%)	19.03		
Al ₂ O ₃ (%)	4.23		
Fe ₂ O ₃ (%)	3.27		
CaO (%)	60.42		
MgO (%)	2.13		5.0 Max.
SO ₃ (%)	2.33		3.5 Max.
K ₂ O (%)	0.05		
Na ₂ O (%)	0.17		
Cl (%)	0.01		0.1 Max
Total (%)	100.03		
Insoluble Residue (IR) (%)	4.88		
C3A (%)	5.68		
Freelime (CaO _f) (%)	1.58		
PHYSICAL TESTS:			
Air permeability - Blaine (m ² /kg)	4498		
Compressive Strength (Mpa):	ISO 2days	14.1	≥10 N/mm ²
	ISO 7days	26.9	-
	ISO 28days	45.9	≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	100		≥60 Minutes
Final setting (minutes)	180		-
Expansion (Lechatelier's) (mm)	2.0		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.
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PLANT MANAGER

QUALITY ASSURANCE MANAGER



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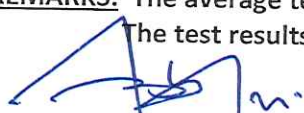
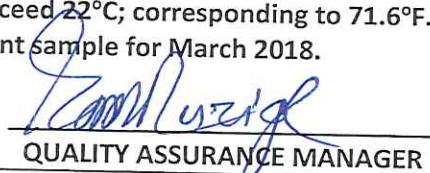


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 03/05/2018

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 (%)	11.07	
SiO ₂ (%)	18.80	
Al ₂ O ₃ (%)	4.14	
Fe ₂ O ₃ (%)	3.33	
CaO (%)	58.42	
MgO (%)	2.23	5.0 Max.
SO ₃ (%)	2.09	3.5 Max.
K ₂ O (%)	0.05	
Na ₂ O (%)	0.17	
Cl (%)	0.01	0.1 Max
Total (%)	<u>100.31</u>	
C3A (%)	5.34	
Freelime (CaO _f) (%)	2.02	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4636	
Compressive Strength (N/mm ²): ISO 2days	10.6	-
ISO 7days	22.8	≥16 N/mm ²
ISO 28days	39.2	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	90	≥75 Minutes
Final setting (minutes)	190	-
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 March 2018.		
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