



SIMBA
CEMENT
STRENGTH WITHIN

DATE: 07/12/2020

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'

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1 = EN 197-1 CEM II/A-L 42.5N
CHEMICAL TESTS:		
Loss on Ignition (%)	4.80	
SiO ₂ (%)	21.15	
Al ₂ O ₃ (%)	5.08	
Fe ₂ O ₃ (%)	2.93	
CaO (%)	62.21	
MgO (%)	0.81	5.0 Max.
SO ₃ (%)	2.32	3.5 Max.
K ₂ O (%)	0.15	
Na ₂ O (%)	0.05	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.39	
P ₂ O ₅ (%)	0.07	
Total (%)	99.97	
Insoluble Residue (IR) (%)	2.71	
C3A (%)	8.51	
Freelime (CaO _f) (%)	2.01	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	3845	
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)	124	≥60 Minutes
Final setting (minutes)	170	-
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. The test results shown are monthly composite cement sample for October 2020.		
 PLANT MANAGER	 QUALITY ASSURANCE MANAGER	



TANGA CEMENT PLC

Head Office:

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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

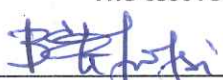



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CERTIFICATE OF CHEMICAL & PHYSICAL TESTS (SIMBA Brand Portland Composite Cement)

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PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1 = EN 197-1
CHEMICAL TESTS:		CEM II/B-M 32.5N
Loss on Ignition (%)	6.06	
SiO ₂ (%)	20.78	
Al ₂ O ₃ (%)	4.73	
Fe ₂ O ₃ (%)	2.81	
CaO (%)	61.77	
MgO (%)	0.77	5.0 Max.
SO ₃ (%)	2.43	3.5 Max.
K ₂ O (%)	0.17	
Na ₂ O (%)	0.06	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.35	
P ₂ O ₅ (%)	0.06	
Total (%)	100.00	
Insoluble Residue (IR) (%)	3.20	
C3A (%)	7.79	
Freelime (CaO _f) (%)	2.11	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	3677	
Compressive Strength (N/mm ²):		-
ISO 7days	23.8	≥16 N/mm ²
ISO 28days	35.6	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	112	≥75 Minutes
Final setting (minutes)	157	-
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 October 2020.		
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PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1 = EN 197-1
CHEMICAL TESTS:		CEM II/B-M 32.5R
Loss on Ignition (%)	8.00	
SiO ₂ (%)	19.43	
Al ₂ O ₃ (%)	4.78	
Fe ₂ O ₃ (%)	2.73	
CaO (%)	61.16	
MgO (%)	0.77	5.0 Max.
SO ₃ (%)	2.45	3.5 Max.
K ₂ O (%)	0.17	
Na ₂ O (%)	0.06	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.36	
P ₂ O ₅ (%)	0.06	
Total (%)	<u>99.98</u>	
Insoluble Residue (IR) (%)	3.07	
C3A (%)	8.05	
Freelime (CaO _f) (%)	2.19	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	3742	
Compressive Strength (Mpa): ISO 2days	13.8	≥10 N/mm ²
ISO 7days	28.3	-
ISO 28days	37.8	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	118	≥75 Minutes
Final setting (minutes)	155	-
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 October 2020.		
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TANGA CEMENT PLC

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