



SIMBA
CEMENT
STRENGTH WITHIN

DATE: 07/10/2020

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
CHEMICAL TESTS:		CEM II/A-L 42.5N
Loss on Ignition (%)	6.72	
SiO ₂ (%)	20.14	
Al ₂ O ₃ (%)	4.84	
Fe ₂ O ₃ (%)	2.59	
CaO (%)	61.37	
MgO (%)	0.77	5.0 Max.
SO ₃ (%)	1.91	3.5 Max.
K ₂ O (%)	0.14	
Na ₂ O (%)	0.02	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.35	
P ₂ O ₅ (%)	0.03	
Total (%)	<u>98.89</u>	
Insoluble Residue (IR) (%)	1.72	
C3A (%)	8.45	
Freelime (CaO _f) (%)	1.87	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4252	
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)	114	≥60 Minutes
Final setting (minutes)	152	-
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 2020.		
 _____ PLANT MANAGER		 _____ QUALITY ASSURANCE MANAGER



TANGA CEMENT PLC

Head Office: Pongwe Factory Area, P O Box 5053, Tanga, Tanzania
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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)

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
CHEMICAL TESTS:		CEM II/B-M 32.5R
Loss on Ignition (%)	8.16	
SiO ₂ (%)	19.76	
Al ₂ O ₃ (%)	4.86	
Fe ₂ O ₃ (%)	2.50	
CaO (%)	60.63	
MgO (%)	0.79	5.0 Max.
SO ₃ (%)	1.93	3.5 Max.
K ₂ O (%)	0.14	
Na ₂ O (%)	0.02	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.35	
P ₂ O ₅ (%)	0.03	
Total (%)	<u>99.17</u>	
Insoluble Residue (IR) (%)	2.53	
C3A (%)	8.65	
Freelime (CaO _f) (%)	2.53	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4078	
Compressive Strength (Mpa): ISO 2days	13.0	≥10 N/mm ²
ISO 7days	26.8	-
ISO 28days	38.4	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	108	≥75 Minutes
Final setting (minutes)	136	-
Expansion (Lechatelier's) (mm)	2.0	10 Max.
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TANGA CEMENT PLC

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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 (%)	8.47	
SiO ₂ (%)	19.09	
Al ₂ O ₃ (%)	4.76	
Fe ₂ O ₃ (%)	2.45	
CaO (%)	59.57	
MgO (%)	0.80	5.0 Max.
SO ₃ (%)	1.94	3.5 Max.
K ₂ O (%)	0.14	
Na ₂ O (%)	0.02	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.34	
P ₂ O ₅ (%)	0.04	
Total (%)	98.97	
Insoluble Residue (IR) (%)	3.80	
C3A (%)	8.47	
Freelime (CaO _f) (%)	2.43	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4139	
Compressive Strength (N/mm ²):		-
ISO 7days	26.5	≥16 N/mm ²
ISO 28days	38.2	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	111	≥75 Minutes
Final setting (minutes)	143	-
Expansion (Lechatelier's) (mm)	2.0	10 Max.
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