

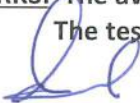



SIMBA
CEMENT
STRENGTH WITHIN

DATE: 01/07/2020

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 32.5N
Loss on Ignition (%)		9.20	
SiO ₂ (%)		17.12	
Al ₂ O ₃ (%)		4.20	
Fe ₂ O ₃ (%)		2.45	
CaO (%)		60.11	
MgO (%)		1.08	5.0 Max.
SO ₃ (%)		2.0	3.5 Max.
K ₂ O (%)		0.18	
Na ₂ O (%)		0.09	
Cl (%)		0.01	0.1 Max
TiO ₂ (%)		0.47	
P ₂ O ₅ (%)		0.08	
Total (%)		99.97	
C3A (%)		6.99	
Freelime (CaO _f) (%)		2.50	
PHYSICAL TESTS:			
Air permeability - Blaine (cm ² /g)		4398	
Compressive Strength (N/mm ²):			-
ISO 7days		24.0	≥16 N/mm ²
ISO 28days		36.0	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)		106	≥75 Minutes
Final setting (minutes)		133	-
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 May 2020.			
 PLANT MANAGER		 QUALITY ASSURANCE MANAGER	



TANGA CEMENT PLC

Head Office: Pongwe Factory Area, P O Box 5053, Tanga, Tanzania
Tel : +255 27 2644 500-2 / 2610 600 / 784 644 500, Fax : +255 27 2646 148 / 2646 425

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
STRENGTH WITHIN

DATE: 01/07/2020

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 (%)	9.30		
SiO ₂ (%)	17.22		
Al ₂ O ₃ (%)	4.30		
Fe ₂ O ₃ (%)	2.35		
CaO (%)	60.00		
MgO (%)	0.73		5.0 Max.
SO ₃ (%)	1.74		3.5 Max.
K ₂ O (%)	0.17		
Na ₂ O (%)	0.03		
Cl (%)	0.01		0.1 Max
TiO ₂ (%)	0.36		
P ₂ O ₅ (%)	0.05		
Total (%)	100.00		
Insoluble Residue (IR) (%)	5.32		
C3A (%)	7.42		
Freelime (CaO _f) (%)	2.5		
PHYSICAL TESTS:			
Air permeability - Blaine (cm ² /g)	4400		
Compressive Strength (Mpa):	ISO 2days	13.4	≥10 N/mm ²
	ISO 7days	25.8	-
	ISO 28days	36.4	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	104		≥75 Minutes
Final setting (minutes)	112		-
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 May 2020.			
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SIMBA
CEMENT
STRENGTH WITHIN

DATE: 01/07/2020

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 (%)	7.50	
SiO ₂ (%)	18.51	
Al ₂ O ₃ (%)	4.50	
Fe ₂ O ₃ (%)	2.52	
CaO (%)	61.32	
MgO (%)	0.78	5.0 Max.
SO ₃ (%)	1.72	3.5 Max.
K ₂ O (%)	0.16	
Na ₂ O (%)	0.05	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.37	
P ₂ O ₅ (%)	0.05	
Total (%)	<u>99.97</u>	
Insoluble Residue (IR) (%)	4.47	
C3A (%)	7.67	
Freelime (CaO _f) (%)	2.20	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	3989	
Compressive Strength (Mpa): ISO 2days	18.6	≥10 N/mm ²
ISO 7days	30.8	-
ISO 28days	48.9	≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	111	≥60 Minutes
Final setting (minutes)	129	-
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 May 2020.		
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