



SIMBA
CEMENT
STRENGTH WITHIN

DATE: 01/02/2023

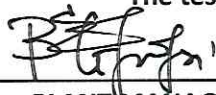
CERTIFICATE OF CHEMICAL & PHYSICAL TESTS (SIMBA Brand Portland Limestone Cement)

Sampled and tested in accordance with the requirements of Tanzania Bureau of Standards 'No. TZS 760'

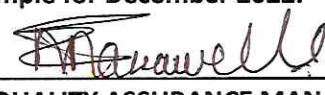
PARAMETER	TEST RESULTS	SPECIFICATION	
		TZS 727-1 = EN 197-1	
CHEMICAL TESTS:		CEM II/A-L 42.5N	
Loss on Ignition (%)	8.77		
SiO ₂ (%)	18.05		
Al ₂ O ₃ (%)	5.19		
Fe ₂ O ₃ (%)	3.32		
CaO (%)	61.21		
MgO (%)	0.60	5.0 Max.	
SO ₃ (%)	2.25	3.5 Max.	
K ₂ O (%)	0.05		
Na ₂ O (%)	0.04		
Cl (%)	0.01	0.1 Max	
TiO ₂ (%)	0.45		
P ₂ O ₅ (%)	0.06		
Total (%)	<u>100.00</u>		
Insoluble Residue (IR) (%)	2.45		
C3A (%)	8.14		
Free lime (CaO _f) (%)	2.18		
PHYSICAL TESTS:			
Air permeability - Blaine (cm ² /g)	4496		
Compressive Strength (Mpa):	ISO 2days	17.1	≥10 N/mm ²
	ISO 7days	33.7	-
	ISO 28days	47.5	≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	126	≥60 Minutes	
	Final setting (minutes)	139	-
Expansion (Lechatelier's) (mm)	1.0	10 Max.	
Specific gravity (g/cc)	3.16		

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 December 2022.



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:

P Rutabanzibwa (Chairperson)*, R Swart (Managing)**, P de Jager (CFO)**, K Omar *,
Rob Wassels**, R Mbilinyi*

Company Secretary:

Quresh Ganijee *

* Tanzanian. ** South African





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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/B-M 32.5R
CHEMICAL TESTS:			
Loss on Ignition (%)	9.32		
SiO ₂ (%)	17.74		
Al ₂ O ₃ (%)	5.25		
Fe ₂ O ₃ (%)	3.22		
CaO (%)	61.02		
MgO (%)	0.71		5.0 Max.
SO ₃ (%)	2.14		3.5 Max.
K ₂ O (%)	0.06		
Na ₂ O (%)	0.04		
Cl (%)	0.01		0.1 Max
TiO ₂ (%)	0.42		
P ₂ O ₅ (%)	0.07		
Total (%)	100.00		
Insoluble Residue (IR) (%)	2.54		
C3A (%)	8.47		
Freelime (CaO _f) (%)	2.08		
PHYSICAL TESTS:			
Air permeability - Blaine (cm ² /g)	4259		
Compressive Strength (Mpa):	ISO 2days	14.0	≥10 N/mm ²
	ISO 7days	28.2	-
	ISO 28days	37.3	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	116		≥75 Minutes
Final setting (minutes)	129		-
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 December 2022.			
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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 (%)	9.17	
SiO ₂ (%)	17.69	
Al ₂ O ₃ (%)	5.23	
Fe ₂ O ₃ (%)	3.34	
CaO (%)	61.10	
MgO (%)	0.70	5.0 Max.
SO ₃ (%)	2.12	3.5 Max.
K ₂ O (%)	0.07	
Na ₂ O (%)	0.05	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.46	
P ₂ O ₅ (%)	0.06	
Total (%)	100.00	
Insoluble Residue (IR) (%)	2.56	
C3A (%)	8.21	
Free lime (CaO _f) (%)	2.08	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4139	
Compressive Strength (N/mm ²):		
ISO 7days	27.3	≥16 N/mm ²
ISO 28days	36.5	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	101	≥75 Minutes
Final setting (minutes)	139	-
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.
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