



SIMBA
CEMENT
STRENGTH WITHIN

DATE: 04/09/2020

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 (%)	7.62	
SiO ₂ (%)	19.04	
Al ₂ O ₃ (%)	5.07	
Fe ₂ O ₃ (%)	2.54	
CaO (%)	60.61	
MgO (%)	0.84	5.0 Max.
SO ₃ (%)	1.88	3.5 Max.
K ₂ O (%)	0.16	
Na ₂ O (%)	0.04	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.35	
P ₂ O ₅ (%)	0.03	
Total (%)	100.00	
Insoluble Residue (IR) (%)	4.82	
C3A (%)	9.14	
Freelime (CaO _f) (%)	1.81	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	3548	
Compressive Strength (Mpa):	ISO 2days	18.0
	ISO 7days	36.0
	ISO 28days	48.5
		≥10 N/mm ²
		-
		≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	117	≥60 Minutes
Final setting (minutes)	145	-
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 July 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 Ganjee

**South African,

~ Independent Non-executive

Non-executive

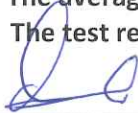



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PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1 = EN 197-1
CHEMICAL TESTS:		CEM II/B-M 32.5R
Loss on Ignition (%)	8.99	
SiO ₂ (%)	19.02	
Al ₂ O ₃ (%)	4.89	
Fe ₂ O ₃ (%)	2.60	
CaO (%)	58.82	
MgO (%)	0.84	5.0 Max.
SO ₃ (%)	1.97	3.5 Max.
K ₂ O (%)	0.15	
Na ₂ O (%)	0.04	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.35	
P ₂ O ₅ (%)	0.04	
Total (%)	100.00	
Insoluble Residue (IR) (%)	6.45	
C3A (%)	8.56	
Freelime (CaO _f) (%)	2.28	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4072	
Compressive Strength (Mpa): ISO 2days	13.5	≥10 N/mm ²
ISO 7days	27.0	-
ISO 28days	37.8	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	109	≥75 Minutes
Final setting (minutes)	126	-
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 July 2020.		
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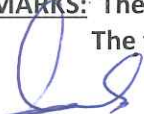
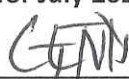


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PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1 = EN 197-1
CHEMICAL TESTS:		CEM II/B-M 32.5N
Loss on Ignition (%)	8.93	
SiO ₂ (%)	18.99	
Al ₂ O ₃ (%)	4.82	
Fe ₂ O ₃ (%)	2.68	
CaO (%)	58.99	
MgO (%)	0.87	5.0 Max.
SO ₃ (%)	1.88	3.5 Max.
K ₂ O (%)	0.17	
Na ₂ O (%)	0.04	
Cl (%)	0.01	0.1 Max
TiO ₂ (%)	0.36	
P ₂ O ₅ (%)	0.05	
Total (%)	99.99	
C3A (%)	8.24	
Freelime (CaO _f) (%)	2.20	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	3575	
Compressive Strength (N/mm ²):		-
ISO 7days	25.6	≥16 N/mm ²
ISO 28days	35.8	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	86	≥75 Minutes
Final setting (minutes)	117	-
Expansion (Lechatelier's) (mm)	2.0	10 Max.
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