

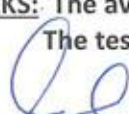
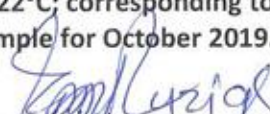


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 06/12/2019

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 :
2002''

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1:2002 = EN 197-1:2000
CHEMICAL TESTS:		CEM II/B-M 32.5N
Loss on Ignition (%)	5.21	
SiO ₂ (%)	21.32	
Al ₂ O ₃ (%)	5.26	
Fe ₂ O ₃ (%)	3.91	
CaO (%)	58.31	
MgO (%)	1.03	5.0 Max.
SO ₃ (%)	1.81	3.5 Max.
K ₂ O (%)	0.21	
Na ₂ O (%)	0.20	
Cl (%)	0.01	0.1 Max
Total (%)	99.97	
C3A (%)	7.33	
Freelime (CaO _f) (%)	1.62	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4729	
Compressive Strength (N/mm ²):		-
ISO 7days	25.4	≥16 N/mm ²
ISO 28days	37.2	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	146	≥75 Minutes
Final setting (minutes)	175	-
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 2019.		
 _____ 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 Ganjjee

**South African, ~Independent Non-executive # Non-executive

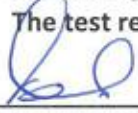
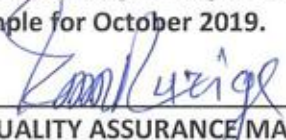


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 06/12/2019

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 : 2002'

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1:2002 = EN 197-1:2000
CHEMICAL TESTS:		CEM II/B-M 32.5R
Loss on Ignition (%)	4.62	
SiO ₂ (%)	23.78	
Al ₂ O ₃ (%)	5.64	
Fe ₂ O ₃ (%)	4.85	
CaO (%)	55.94	
MgO (%)	0.97	5.0 Max.
SO ₃ (%)	1.87	3.5 Max.
K ₂ O (%)	0.25	
Na ₂ O (%)	0.27	
Cl (%)	0.01	0.1 Max
Total (%)	100.95	
Insoluble Residue (IR) (%)	5.52	
C3A (%)	6.75	
Freelime (CaO _f) (%)	1.80	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4598	
Compressive Strength (Mpa):	ISO 2days	≥10 N/mm ²
	ISO 7days	-
	ISO 28days	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	152	≥75 Minutes
	Final setting (minutes)	174
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 2019.		
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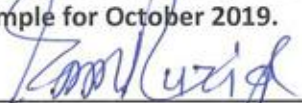


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 06/12/2019

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 : 2002''

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1:2002 = EN 197-1:2000
CHEMICAL TESTS:		CEM II/A-L 42.5N
Loss on Ignition (%)	7.89	
SiO ₂ (%)	18.34	
Al ₂ O ₃ (%)	4.60	
Fe ₂ O ₃ (%)	3.27	
CaO (%)	61.20	
MgO (%)	0.87	5.0 Max.
SO ₃ (%)	1.85	3.5 Max.
K ₂ O (%)	0.18	
Na ₂ O (%)	0.01	
Cl (%)	0.01	0.1 Max
Total (%)	100.60	
Insoluble Residue (IR) (%)	4.55	
C3A (%)	6.66	
Freelime (CaO _f) (%)	1.94	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4866	
Compressive Strength (Mpa):	ISO 2days	15.5
	ISO 7days	32.1
	ISO 28days	50.8
		≥10 N/mm ²
		-
		≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	142	≥60 Minutes
Final setting (minutes)	172	-
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 October 2019.		
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