

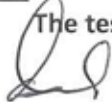
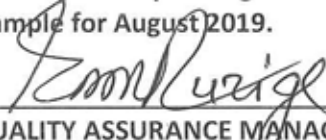


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 02/10/2019

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 CEM II/B-M 32.5N
CHEMICAL TESTS:		
Loss on Ignition (%)	9.02	
SiO ₂ (%)	21.25	
Al ₂ O ₃ (%)	5.13	
Fe ₂ O ₃ (%)	4.10	
CaO (%)	57.13	
MgO (%)	1.03	5.0 Max.
SO ₃ (%)	1.86	3.5 Max.
K ₂ O (%)	0.24	
Na ₂ O (%)	0.23	
Cl (%)	0.01	0.1 Max
Total (%)	100.00	
C3A (%)	6.67	
Freelime (CaO _f) (%)	1.64	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4488	
Compressive Strength (N/mm ²):		
ISO 7days	22.8	≥16 N/mm ²
ISO 28days	38.9	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	90	≥75 Minutes
Final setting (minutes)	183	-
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 August 2019.		
		
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

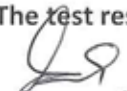
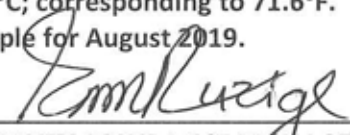


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 02/10/2019

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 (%)		9.02	
SiO ₂ (%)		23.23	
Al ₂ O ₃ (%)		5.56	
Fe ₂ O ₃ (%)		4.50	
CaO (%)		56.01	
MgO (%)		1.83	5.0 Max.
SO ₃ (%)		1.66	3.5 Max.
K ₂ O (%)		0.25	
Na ₂ O (%)		0.23	
Cl (%)		0.01	0.1 Max
Total (%)		100.00	
PHYSICAL TESTS:			
Insoluble Residue (IR) (%)		5.47	
C3A (%)		7.13	
Freelime (CaO _f) (%)		1.54	
Air permeability - Blaine (cm ² /g)		4616	
Compressive Strength (Mpa):	ISO 2days	12.8	≥10 N/mm ²
	ISO 7days	25.6	-
	ISO 28days	39.8	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)		100	≥75 Minutes
Final setting (minutes)		180	-
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 August 2019.			
			
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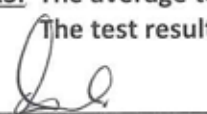
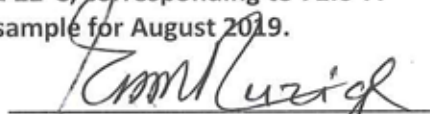


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 02/10/2019

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 (%)	8.62	
SiO ₂ (%)	18.28	
Al ₂ O ₃ (%)	4.75	
Fe ₂ O ₃ (%)	3.08	
CaO (%)	62.32	
MgO (%)	0.83	5.0 Max.
SO ₃ (%)	1.90	3.5 Max.
K ₂ O (%)	0.17	
Na ₂ O (%)	0.04	
Cl (%)	0.01	0.1 Max
Total (%)	100.00	
Insoluble Residue (IR) (%)	4.62	
C3A (%)	7.38	
Freelime (CaO _f) (%)	1.70	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4612	
Compressive Strength (Mpa): ISO 2days	17.1	≥10 N/mm ²
ISO 7days	32.1	-
ISO 28days	50.7	≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	110	≥60 Minutes
Final setting (minutes)	220	-
Expansion (Lechatelier's) (mm)	0.0	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 2019.		
 _____ PLANT MANAGER		 _____ QUALITY ASSURANCE MANAGER



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