

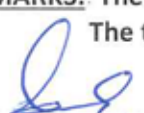
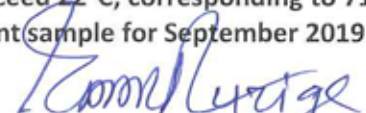


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 06/11/2019

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 (%)	5.14	
SiO ₂ (%)	21.02	
Al ₂ O ₃ (%)	5.29	
Fe ₂ O ₃ (%)	4.11	
CaO (%)	59.31	
MgO (%)	1.33	5.0 Max.
SO ₃ (%)	1.88	3.5 Max.
K ₂ O (%)	0.21	
Na ₂ O (%)	0.20	
Cl (%)	0.01	0.1 Max
Total (%)	100.12	
C3A (%)	7.07	
Freelime (CaO _f) (%)	1.62	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4748	
Compressive Strength (N/mm ²):		
ISO 7days	30.7	≥16 N/mm ²
ISO 28days	49.5	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	90	≥75 Minutes
Final setting (minutes)	200	-
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 September 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

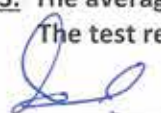
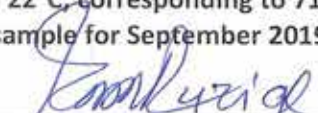


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			TZS 727-1:2002 = EN 197-1:2000
CHEMICAL TESTS:			CEM II/B-M 32.5R
Loss on Ignition (%)	5.01		
SiO ₂ (%)	22.55		
Al ₂ O ₃ (%)	5.64		
Fe ₂ O ₃ (%)	4.71		
CaO (%)	56.41		
MgO (%)	1.72		5.0 Max.
SO ₃ (%)	1.84		3.5 Max.
K ₂ O (%)	0.27		
Na ₂ O (%)	0.28		
Cl (%)	0.01		0.1 Max
Total (%)	99.89		
PHYSICAL TESTS:			
Insoluble Residue (IR) (%)	5.32		
C3A (%)	6.99		
Freelime (CaO _f) (%)	1.43		
Air permeability - Blaine (cm ² /g)	4489		
Compressive Strength (Mpa):	ISO 2days	11.9	≥10 N/mm ²
	ISO 7days	25.3	-
	ISO 28days	44.5	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	100		≥75 Minutes
Final setting (minutes)	210		-
Expansion (Lechatelier's) (mm)	1.0		10 Max.
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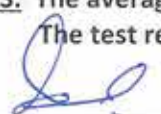
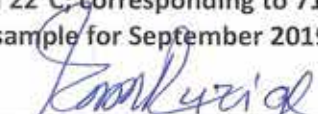


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