

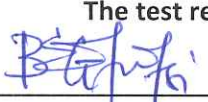
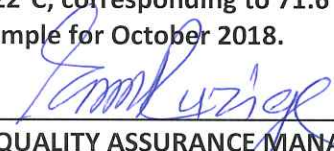


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 05/12/2018

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 (%)	7.50	
SiO ₂ (%)	20.66	
Al ₂ O ₃ (%)	4.91	
Fe ₂ O ₃ (%)	3.50	
CaO (%)	58.53	
MgO (%)	1.21	5.0 Max.
SO ₃ (%)	1.87	3.5 Max.
K ₂ O (%)	0.17	
Na ₂ O (%)	0.02	
Cl (%)	0.01	0.1 Max
Total (%)	98.47	
Insoluble Residue (IR) (%)	5.50	
C3A (%)	7.09	
Freelime (CaO _f) (%)	1.80	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4583	
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)	80	≥75 Minutes
Final setting (minutes)	190	-
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 2018.		
 _____ 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 Mbillinyi~

Company Secretary:

Quresh Ganjee

**South African,

~ Independent Non-executive

Non-executive

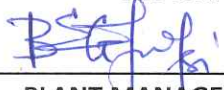
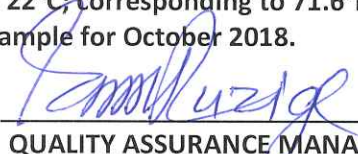


**SIMBA
CEMENT**
STRENGTH WITHIN

DATE: 05/12/2018

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 (%)	6.54		
SiO ₂ (%)	20.04		
Al ₂ O ₃ (%)	4.76		
Fe ₂ O ₃ (%)	3.06		
CaO (%)	61.98		
MgO (%)	0.87	5.0 Max.	
SO ₃ (%)	1.88	3.5 Max.	
K ₂ O (%)	0.13		
Na ₂ O (%)	0.06		
Cl (%)	0.01	0.1 Max	
Total (%)	99.33		
Insoluble Residue (IR) (%)	4.50		
C3A (%)	7.45		
Freelime (CaO _f) (%)	2.00		
PHYSICAL TESTS:			
Air permeability - Blaine (m ² /kg)	4358		
Compressive Strength (Mpa):	ISO 2days	19.70	≥10 N/mm ²
	ISO 7days	36.40	-
	ISO 28days	54.70	≥42.5 N/mm ² ; ≤62.5 N/mm ²
Vicat test: Initial setting (minutes)	90	≥60 Minutes	
Final setting (minutes)	200	-	
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 2018.			
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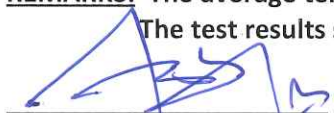
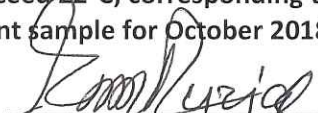


SIMBA
CEMENT
STRENGTH WITHIN

DATE: 05/12/2018

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 (%)	10.25	
SiO ₂ (%)	18.34	
Al ₂ O ₃ (%)	53.72	
Fe ₂ O ₃ (%)	3.04	
CaO (%)	60.11	
MgO (%)	2.18	5.0 Max.
SO ₃ (%)	2.05	3.5 Max.
K ₂ O (%)	0.08	
Na ₂ O (%)	0.20	
Cl (%)	0.01	0.1 Max
Total (%)	<u>99.97</u>	
C3A (%)	4.72	
Freelime (CaO _f) (%)	1.71	
PHYSICAL TESTS:		
Air permeability - Blaine (cm ² /g)	4824	
Compressive Strength (N/mm ²):		-
ISO 7days	22.3	≥16 N/mm ²
ISO 28days	36.3	≥32.5 N/mm ² ; ≤52.5 N/mm ²
Vicat test: Initial setting (minutes)	120	≥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 October 2018.		
 PLANT MANAGER	 QUALITY ASSURANCE MANAGER	



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