

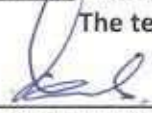
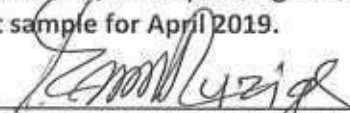


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 03/06/2019

**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
<b>CHEMICAL TESTS:</b>		
Loss on Ignition (%)	6.44	
SiO <sub>2</sub> (%)	21.36	
Al <sub>2</sub> O <sub>3</sub> (%)	5.52	
Fe <sub>2</sub> O <sub>3</sub> (%)	4.26	
CaO (%)	57.98	
MgO (%)	1.29	5.0 Max.
SO <sub>3</sub> (%)	1.99	3.5 Max.
K <sub>2</sub> O (%)	0.15	
Na <sub>2</sub> O (%)	0.01	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b>99.00</b>	
C3A (%)	7.43	
Freelime (CaO <sub>f</sub> ) (%)	2.11	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4825	
Compressive Strength (N/mm <sup>2</sup> ):		
ISO 7days	26.7	≥16 N/mm <sup>2</sup>
ISO 28days	40.5	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)	100	≥75 Minutes
Final setting (minutes)	200	
Expansion (Lechatelier's) (mm)	1.0	10 Max.
<b>REMARKS:</b> 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 April 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 Mbiliyi--

**Company Secretary:** Quresh Ganjee

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

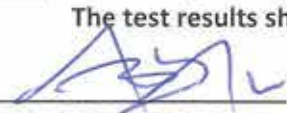



**SIMBA**  
**CEMENT**  
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## CERTIFICATE OF CHEMICAL & PHYSICAL TESTS (SIMBA Brand Portland Composite Cement)

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
<b>CHEMICAL TESTS:</b>		CEM II/B-M 32.5R
Loss on Ignition (%)	6.67	
SiO <sub>2</sub> (%)	23.48	
Al <sub>2</sub> O <sub>3</sub> (%)	5.48	
Fe <sub>2</sub> O <sub>3</sub> (%)	4.07	
CaO (%)	55.17	
MgO (%)	1.62	5.0 Max.
SO <sub>3</sub> (%)	1.97	3.5 Max.
K <sub>2</sub> O (%)	0.18	
Na <sub>2</sub> O (%)	0.16	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b>98.80</b>	
Insoluble Residue (IR) (%)	5.47	
C3A (%)	7.64	
Freelime (CaO <sub>f</sub> ) (%)	1.97	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4519	
Compressive Strength (Mpa):	ISO 2days	≥10 N/mm <sup>2</sup>
	ISO 7days	-
	ISO 28days	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)	100	≥75 Minutes
Final setting (minutes)		-
Expansion (Lechatelier's) (mm)	1.0	10 Max.
<b>REMARKS:</b> 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 April 2019.		
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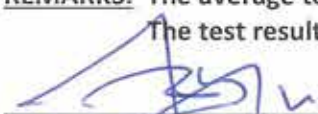
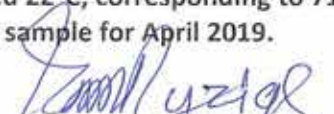


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE OF ISSUE: 03/06/2019

## 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
<b>CHEMICAL TESTS:</b>		CEM II/A-L 42.5N
Loss on Ignition (%)	7.36	
SiO <sub>2</sub> (%)	20.05	
Al <sub>2</sub> O <sub>3</sub> (%)	4.70	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.96	
CaO (%)	60.90	
MgO (%)	0.83	5.0 Max.
SO <sub>3</sub> (%)	1.94	3.5 Max.
K <sub>2</sub> O (%)	0.13	
Na <sub>2</sub> O (%)	0.04	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b>98.91</b>	
Insoluble Residue (IR) (%)	4.62	
C3A (%)	7.45	
Freelime (CaO <sub>f</sub> ) (%)	2.19	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4385	
Compressive Strength (Mpa):	ISO 2days	≥10 N/mm <sup>2</sup>
	ISO 7days	-
	ISO 28days	≥42.5 N/mm <sup>2</sup> ; ≤62.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)	100	≥60 Minutes
Final setting (minutes)	220	-
Expansion (Lechatelier's) (mm)	1.0	10 Max.
Specific gravity (g/cc)	3.0	
<b>REMARKS:</b> 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 April 2019.		
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