


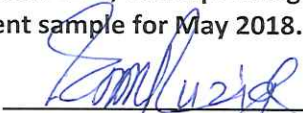


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 04/07/2018

**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
<b>CHEMICAL TESTS:</b>		CEM II/B-M 32.5R
Loss on Ignition (%)	10.17	
SiO <sub>2</sub> (%)	18.39	
Al <sub>2</sub> O <sub>3</sub> (%)	4.41	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.82	
CaO (%)	60.42	
MgO (%)	1.29	5.0 Max.
SO <sub>3</sub> (%)	2.20	3.5 Max.
K <sub>2</sub> O (%)	0.14	
Na <sub>2</sub> O (%)	0.12	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b>99.97</b>	
Insoluble Residue (IR) (%)	5.33	
C3A (%)	6.13	
Freelime (CaO <sub>f</sub> ) (%)	2.15	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4769	
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)	90	≥75 Minutes
Final setting (minutes)	210	-
Expansion (Lechatelier's) (mm)	2.0	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 May 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. Mbilinyi~

Company Secretary:

Quresh Ganijee

\*\*South African,

~ Independent Non-executive

# Non-executive

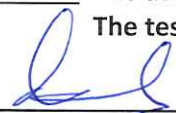
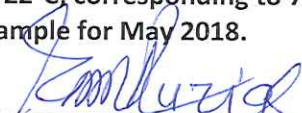


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 04/07/2018

## 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
<b>CHEMICAL TESTS:</b>		CEM II/A-L 42.5N
Loss on Ignition (%)	9.55	
SiO <sub>2</sub> (%)	18.16	
Al <sub>2</sub> O <sub>3</sub> (%)	4.48	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.71	
CaO (%)	60.60	
MgO (%)	1.14	5.0 Max.
SO <sub>3</sub> (%)	2.74	3.5 Max.
K <sub>2</sub> O (%)	0.16	
Na <sub>2</sub> O (%)	0.14	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b>99.69</b>	
Insoluble Residue (IR) (%)	4.62	
C3A (%)	7.29	
Freelime (CaO <sub>f</sub> ) (%)	2.20	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (m <sup>2</sup> /kg)	4544	
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)	200
Expansion (Lechatelier's) (mm)	2.0	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 May 2018.		
 _____ <b>PLANT MANAGER</b>		 _____ <b>QUALITY ASSURANCE MANAGER</b>



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