

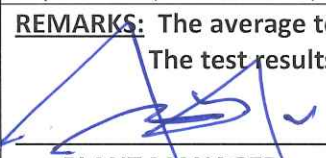



**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

**DATE: 07/11/2018**

## 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 32.5N
Loss on Ignition (%)	6.29	
SiO <sub>2</sub> (%)	22.36	
Al <sub>2</sub> O <sub>3</sub> (%)	5.21	
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 (%)	0.21	
Na <sub>2</sub> O (%)	0.18	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b><u>99.77</u></b>	
C3A (%)	6.61	
Freelime (CaO <sub>f</sub> ) (%)	1.81	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4867	
Compressive Strength (N/mm <sup>2</sup> ):		-
ISO 7days	23.5	≥16 N/mm <sup>2</sup>
ISO 28days	37.3	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)	78	≥75 Minutes
Final setting (minutes)	180	-
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 September 2018.		
 PLANT MANAGER	 QUALITY ASSURANCE MANAGER	



### TANGA CEMENT PLC

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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 Mbilinyi~

**Company Secretary:**

Quresh Ganijee

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

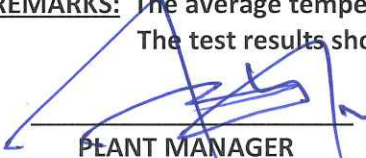
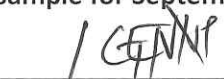


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**CEMENT**  
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DATE: 07/11/2018

## 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 (%)	6.41	
SiO <sub>2</sub> (%)	22.57	
Al <sub>2</sub> O <sub>3</sub> (%)	5.32	
Fe <sub>2</sub> O <sub>3</sub> (%)	4.36	
CaO (%)	57.25	
MgO (%)	1.39	5.0 Max.
SO <sub>3</sub> (%)	1.88	3.5 Max.
K <sub>2</sub> O (%)	0.21	
Na <sub>2</sub> O (%)	0.18	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b><u>99.57</u></b>	
Insoluble Residue (IR) (%)	5.67	
C3A (%)	6.73	
Freelime (CaO <sub>f</sub> ) (%)	1.98	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4535	
Compressive Strength (Mpa): ISO 2days	13.5	≥10 N/mm <sup>2</sup>
ISO 7days	27.7	-
ISO 28days	40.8	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)	80	≥75 Minutes
Final setting (minutes)	190	-
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 September 2018.		
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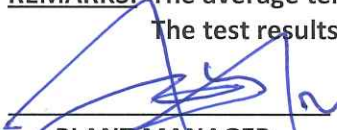
DATE: 07/11/2018

## 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 (%)	6.94	
SiO <sub>2</sub> (%)	20.13	
Al <sub>2</sub> O <sub>3</sub> (%)	4.71	
Fe <sub>2</sub> O <sub>3</sub> (%)	3.28	
CaO (%)	61.02	
MgO (%)	1.27	5.0 Max.
SO <sub>3</sub> (%)	1.92	3.5 Max.
K <sub>2</sub> O (%)	0.14	
Na <sub>2</sub> O (%)	0.19	
Cl (%)	0.01	0.1 Max
<b>Total (%)</b>	<b>99.47</b>	
Insoluble Residue (IR) (%)	4.61	
C3A (%)	6.94	
Freelime (CaO <sub>f</sub> ) (%)	2.12	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (m <sup>2</sup> /kg)	4211	
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)	80	≥60 Minutes
Final setting (minutes)	210	-
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 September 2018.

  
PLANT MANAGER

  
QUALITY ASSURANCE MANAGER



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