

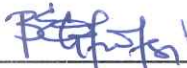
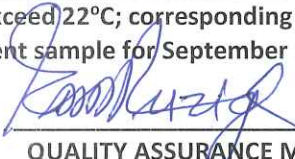


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 03/11/2021

## 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'

PARAMETER	TEST RESULTS		SPECIFICATION
			TZS 727-1 = EN 197-1
<b>CHEMICAL TESTS:</b>			CEM II/B-M 32.5N
Loss on Ignition (%)		9.13	
SiO <sub>2</sub> (%)		18.78	
Al <sub>2</sub> O <sub>3</sub> (%)		5.48	
Fe <sub>2</sub> O <sub>3</sub> (%)		2.61	
CaO (%)		60.41	
MgO (%)		0.81	5.0 Max.
SO <sub>3</sub> (%)		2.23	3.5 Max.
K <sub>2</sub> O (%)		0.13	
Na <sub>2</sub> O (%)		0.01	
Cl (%)		0.01	0.1 Max
TiO <sub>2</sub> (%)		0.29	
P <sub>2</sub> O <sub>5</sub> (%)		0.02	
<b>Total (%)</b>		<b>100.0</b>	
Insoluble Residue (IR) (%)		2.44	
C3A (%)		10.11	
Freelime (CaO <sub>f</sub> ) (%)		1.87	
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)		4400	
Compressive Strength (N/mm <sup>2</sup> ):			
	ISO 7days	23.9	≥16 N/mm <sup>2</sup>
	ISO 28days	37.1	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)		120	≥75 Minutes
Final setting (minutes)		165	-
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 2021.			
 PLANT MANAGER		 QUALITY ASSURANCE MANAGER	



### TANGA CEMENT PLC

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**Company Secretary:**

Quresh Ganijee\*  
\*Tanzanian, \*\*South African





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

DATE: 03/11/2021

**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'

PARAMETER	TEST RESULTS	SPECIFICATION
		TZS 727-1 = EN 197-1 CEM II/B-M 32.5R
<b>CHEMICAL TESTS:</b>		
Loss on Ignition (%)	8.52	
SiO <sub>2</sub> (%)	19.52	
Al <sub>2</sub> O <sub>3</sub> (%)	5.30	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.62	
CaO (%)	59.96	
MgO (%)	0.74	5.0 Max.
SO <sub>3</sub> (%)	2.13	3.5 Max.
K <sub>2</sub> O (%)	0.12	
Na <sub>2</sub> O (%)	0.07	
Cl (%)	0.01	0.1 Max
TiO <sub>2</sub> (%)	0.29	
P <sub>2</sub> O <sub>5</sub> (%)	0.02	
<b>Total (%)</b>	<b>99.33</b>	
Insoluble Residue (IR) (%)	3.11	
C3A (%)	9.62	
Freelime (CaO <sub>f</sub> ) (%)	1.96	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4394	
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)	125	≥75 Minutes
	Final setting (minutes)	148
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 2021.		
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**CEMENT**  
STRENGTH WITHIN

DATE: 03/11/2021

## 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'

PARAMETER	TEST RESULTS		SPECIFICATION
			TZS 727-1 = EN 197-1
<b>CHEMICAL TESTS:</b>			CEM II/A-L 42.5N
Loss on Ignition (%)		7.33	
SiO <sub>2</sub> (%)		19.82	
Al <sub>2</sub> O <sub>3</sub> (%)		5.73	
Fe <sub>2</sub> O <sub>3</sub> (%)		2.67	
CaO (%)		60.58	
MgO (%)		0.82	5.0 Max.
SO <sub>3</sub> (%)		2.14	3.5 Max.
K <sub>2</sub> O (%)		0.14	
Na <sub>2</sub> O (%)		0.02	
Cl (%)		0.01	0.1 Max
TiO <sub>2</sub> (%)		0.31	
P <sub>2</sub> O <sub>5</sub> (%)		0.02	
<b>Total (%)</b>		<b>99.68</b>	
Insoluble Residue (IR) (%)		2.87	
C3A (%)		10.67	
Freelime (CaO <sub>f</sub> ) (%)		1.60	
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)		4341	
Compressive Strength (Mpa):	ISO 2days	18.1	≥10 N/mm <sup>2</sup>
	ISO 7days	31.6	-
	ISO 28days	46.5	≥42.5 N/mm <sup>2</sup> ; ≤62.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)		127	≥60 Minutes
	Final setting (minutes)	161	-
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 September 2021.			
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