



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

DATE: 02/06/2021

## 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 (%)	10.44		
SiO <sub>2</sub> (%)	18.16		
Al <sub>2</sub> O <sub>3</sub> (%)	4.89		
Fe <sub>2</sub> O <sub>3</sub> (%)	2.74		
CaO (%)	60.00		
MgO (%)	0.82		5.0 Max.
SO <sub>3</sub> (%)	2.19		3.5 Max.
K <sub>2</sub> O (%)	0.13		
Na <sub>2</sub> O (%)	0.06		
Cl (%)	0.01		0.1 Max
TiO <sub>2</sub> (%)	0.34		
P <sub>2</sub> O <sub>5</sub> (%)	0.08		
<b>Total (%)</b>	<b>99.86</b>		
Insoluble Residue (IR) (%)	3.50		
C3A (%)	8.33		
Freelime (CaO <sub>f</sub> ) (%)	2.56		
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)	3895		
Compressive Strength (N/mm <sup>2</sup> ):			-
ISO 7days	26.5		≥16 N/mm <sup>2</sup>
ISO 28days	39.6		≥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)	152		-
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 April 2021.			
 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\*\*, R. Mbilinyi\*

**Company Secretary:**

Quresh Ganjjee\*

\*Tanzanian, \*\*South African



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

DATE: 02/06/2021

**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 32.5R
Loss on Ignition (%)	10.00	
SiO <sub>2</sub> (%)	18.41	
Al <sub>2</sub> O <sub>3</sub> (%)	4.72	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.75	
CaO (%)	59.69	
MgO (%)	0.79	5.0 Max.
SO <sub>3</sub> (%)	2.45	3.5 Max.
K <sub>2</sub> O (%)	0.13	
Na <sub>2</sub> O (%)	0.11	
Cl (%)	0.01	0.1 Max
TiO <sub>2</sub> (%)	0.32	
P <sub>2</sub> O <sub>5</sub> (%)	0.08	
<b>Total (%)</b>	<b>99.46</b>	
Insoluble Residue (IR) (%)	2.99	
C3A (%)	7.86	
Freelime (CaO <sub>f</sub> ) (%)	2.57	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	3846	
Compressive Strength (Mpa): ISO 2days	12.8	≥10 N/mm <sup>2</sup>
ISO 7days	24.8	-
ISO 28days	41.5	≥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)	159	-
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 April 2021.		
 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\*\*, R Mbilinyi\*

Company Secretary:

Quresh Ganjjee\*

\*Tanzanian, \*\*South African



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

DATE: 02/06/2021

## 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 CEM II/A-L 42.5N
<b>CHEMICAL TESTS:</b>		
Loss on Ignition (%)	7.86	
SiO <sub>2</sub> (%)	19.26	
Al <sub>2</sub> O <sub>3</sub> (%)	4.88	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.98	
CaO (%)	60.37	
MgO (%)	0.75	5.0 Max.
SO <sub>3</sub> (%)	2.54	3.5 Max.
K <sub>2</sub> O (%)	0.15	
Na <sub>2</sub> O (%)	0.11	
Cl (%)	0.01	0.1 Max
TiO <sub>2</sub> (%)	0.34	
P <sub>2</sub> O <sub>5</sub> (%)	0.13	
<b>Total (%)</b>	<b>99.38</b>	
Insoluble Residue (IR) (%)	3.02	
C3A (%)	7.90	
Freelime (CaO <sub>f</sub> ) (%)	2.45	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	3794	
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)	124	≥60 Minutes
Final setting (minutes)	150	-
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 April 2021.

  
\_\_\_\_\_  
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\*\*, R. Mbilinyi\*

**Company Secretary:** Quresh Ganijee\*

\*Tanzanian, \*\*South African