


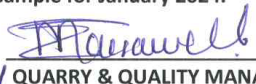


Heidelberg Materials

DATE: 04/03/2024

**CERTIFICATE OF CHEMICAL & PHYSICAL TESTS**  
**SIMBA BORA, CEMII/A-L CLASS 42.5N**  
**JANUARY, 2024**

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 (%)	9.11		
SiO <sub>2</sub> (%)	19.54		
Al <sub>2</sub> O <sub>3</sub> (%)	5.22		
Fe <sub>2</sub> O <sub>3</sub> (%)	3.48		
CaO (%)	59.44		
MgO (%)	0.65		5.0 Max.
SO <sub>3</sub> (%)	2.01		3.5 Max.
K <sub>2</sub> O (%)	0.11		
Na <sub>2</sub> O (%)	0.06		
Cl (%)	0.01		0.1 Max
TiO <sub>2</sub> (%)	0.31		
P <sub>2</sub> O <sub>5</sub> (%)	0.05		
<b>Total (%)</b>	<b>99.99</b>		
Insoluble Residue (IR) (%)	2.48		
C3A (%)	7.95		
Free lime (CaO <sub>f</sub> ) (%)	1.97		
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)	4208		
Compressive Strength (Mpa):	ISO 2days	17.1	≥10 N/mm <sup>2</sup>
	ISO 7days	33.4	-
	ISO 28days	47.8	≥42.5 N/mm <sup>2</sup> ; ≤62.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)	118		≥60 Minutes
Final setting (minutes)	140		-
Expansion (Lechatelier's) (mm)	1.0		10 Max.
Specific gravity (g/cc)	3.16		
<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 January 2024.			
 PLANT MANAGER		 / QUARRY & QUALITY 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:** Mr H Gurdal (Chairperson)\*\*\*, Mr C Mikli \*\*\*\*, P de Jager (CFO)\*\*, R Mbilinyi\*  
Mr F Brambilla\*\*\*\*\*, Mr G Puppo\*\*\*\*\*

**Company Secretary:** Quresh Ganjee \*

\* Tanzanian \*\* South African \*\*\* Turkish \*\*\*\* German \*\*\*\*\* Italian

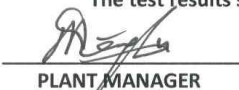
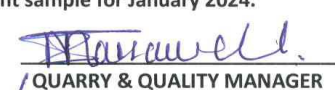


Heidelberg Materials

DATE: 04/03/2024

**CERTIFICATE OF CHEMICAL & PHYSICAL TESTS**  
**SIMBA IMARA, CEMII/B-M CLASS 32.5R**  
**JANUARY, 2024**

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 (%)		8.47	
SiO <sub>2</sub> (%)		19.89	
Al <sub>2</sub> O <sub>3</sub> (%)		5.38	
Fe <sub>2</sub> O <sub>3</sub> (%)		3.57	
CaO (%)		59.29	
MgO (%)		0.65	5.0 Max.
SO <sub>3</sub> (%)		2.18	3.5 Max.
K <sub>2</sub> O (%)		0.12	
Na <sub>2</sub> O (%)		0.05	
Cl (%)		0.01	0.1 Max
TiO <sub>2</sub> (%)		0.31	
P <sub>2</sub> O <sub>5</sub> (%)		0.07	
<b>Total (%)</b>		<b>99.99</b>	
Insoluble Residue (IR) (%)		2.50	
C3A (%)		8.22	
Freelime (CaO <sub>f</sub> ) (%)		2.15	
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)		4090	
Compressive Strength (Mpa):	ISO 2days	14.6	≥10 N/mm <sup>2</sup>
	ISO 7days	27.4	-
	ISO 28days	37.7	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)		101	≥75 Minutes
Final setting (minutes)		125	-
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 January 2024.			
 PLANT MANAGER		 / QUARRY & QUALITY 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:** Mr H Gurdal (Chairperson)\*\*\*, Mr C Mikli \*\*\*\*, P de Jager (CFO)\*\*, R Mbilinyi\*  
Mr F Brambilla\*\*\*\*\*, Mr G Puppo\*\*\*\*\*

**Company Secretary:** Quresh Ganijee \*

\* Tanzanian \*\* South African \*\*\* Turkish \*\*\*\* German \*\*\*\*\* Italian



Heidelberg Materials

DATE: 04/03/2024

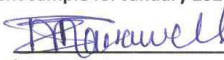
**CERTIFICATE OF CHEMICAL & PHYSICAL TESTS**  
**SIMBA BARABARA, CEMII/B-M CLASS 32.5N**  
**JANUARY, 2024**

Sampled and tested in accordance with the requirements of Tanzania Bureau of Standards 'No. TZS 760'

PARAMETER		TEST RESULTS	SPECIFICATION
<b>CHEMICAL TESTS:</b>			TZS 727-1 = EN 197-1 CEM II/B-M 32.5N
Loss on Ignition (%)		7.44	
SiO <sub>2</sub> (%)		20.28	
Al <sub>2</sub> O <sub>3</sub> (%)		5.40	
Fe <sub>2</sub> O <sub>3</sub> (%)		3.59	
CaO (%)		59.64	
MgO (%)		0.81	5.0 Max.
SO <sub>3</sub> (%)		2.19	3.5 Max.
K <sub>2</sub> O (%)		0.11	
Na <sub>2</sub> O (%)		0.06	
Cl (%)		0.01	0.1 Max
TiO <sub>2</sub> (%)		0.40	
P <sub>2</sub> O <sub>5</sub> (%)		0.07	
<b>Total (%)</b>		<b>100.00</b>	
Insoluble Residue (IR) (%)		2.49	
C3A (%)		8.24	
Free lime (CaO <sub>f</sub> ) (%)		2.16	
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)		4124	
Compressive Strength (N/mm <sup>2</sup> ):			
	ISO 7days	25.8	≥16 N/mm <sup>2</sup>
	ISO 28days	37.6	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)		102	≥75 Minutes
	Final setting (minutes)	130	-
Expansion (Lechatelier's) (mm)		2.0	10 Max.

**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 January 2024.

  
PLANT MANAGER

  
QUARRY & QUALITY 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:** Mr H Gurdal (Chairperson)\*\*\*, Mr C. Mikli \*\*\*\*, P de Jager (CFO)\*\*, R Mbilinyi\*  
Mr F Brambilla\*\*\*\*\*, Mr G Puppo\*\*\*\*\*

**Company Secretary:** Quresh Ganijee \*

\* Tanzanian \*\* South African \*\*\* Turkish \*\*\*\* German \*\*\*\*\* Italian