

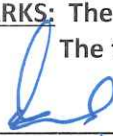
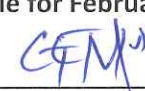


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 08/04/2020

## 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 CEM II/B-M 32.5N
<b>CHEMICAL TESTS:</b>		
Loss on Ignition (%)	11.57	
SiO <sub>2</sub> (%)	17.58	
Al <sub>2</sub> O <sub>3</sub> (%)	4.43	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.39	
CaO (%)	60.21	
MgO (%)	0.82	5.0 Max.
SO <sub>3</sub> (%)	1.44	3.5 Max.
K <sub>2</sub> O (%)	0.14	
Na <sub>2</sub> O (%)	0.06	
Cl (%)	0.01	0.1 Max
TiO <sub>2</sub> (%)	0.32	
P <sub>2</sub> O <sub>5</sub> (%)	0.04	
<b>Total (%)</b>	<b>100.00</b>	
C3A (%)	7.70	
Freelime (CaO <sub>f</sub> ) (%)	1.32	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4630	
Compressive Strength (N/mm <sup>2</sup> ):		-
ISO 7days	27.4	≥16 N/mm <sup>2</sup>
ISO 28days	38.4	≥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)	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 February 2020.		
 PLANT MANAGER	 QUALITY ASSURANCE MANAGER	



### TANGA CEMENT PLC

**Head Office:**

Pongwe Factory Area, P O Box 5053, Tanga, Tanzania  
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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



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

DATE: 08/04/2020

## 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 (%)		7.24	
SiO <sub>2</sub> (%)		17.58	
Al <sub>2</sub> O <sub>3</sub> (%)		4.09	
Fe <sub>2</sub> O <sub>3</sub> (%)		2.13	
CaO (%)		60.98	
MgO (%)		0.77	5.0 Max.
SO <sub>3</sub> (%)		1.45	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> (%)		0.29	
P <sub>2</sub> O <sub>5</sub> (%)		0.03	
<b>Total (%)</b>		<b>99.66</b>	
Insoluble Residue (IR) (%)		5.32	
C3A (%)		7.24	
Freelime (CaO <sub>f</sub> ) (%)		1.16	
<b>PHYSICAL TESTS:</b>			
Air permeability - Blaine (cm <sup>2</sup> /g)		4644	
Compressive Strength (Mpa):	ISO 2days	14.8	≥10 N/mm <sup>2</sup>
	ISO 7days	28.2	-
	ISO 28days	40.1	≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup>
Vicat test: Initial setting (minutes)		124	≥75 Minutes
Final setting (minutes)		155	-
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 February 2020.			
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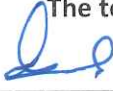



**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

**DATE: 08/04/2020**

## 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 (%)	9.80	
SiO <sub>2</sub> (%)	18.31	
Al <sub>2</sub> O <sub>3</sub> (%)	4.66	
Fe <sub>2</sub> O <sub>3</sub> (%)	2.40	
CaO (%)	61.00	
MgO (%)	0.82	5.0 Max.
SO <sub>3</sub> (%)	1.18	3.5 Max.
K <sub>2</sub> O (%)	0.13	
Na <sub>2</sub> O (%)	0.05	
Cl (%)	0.01	0.1 Max
TiO <sub>2</sub> (%)	0.32	
P <sub>2</sub> O <sub>5</sub> (%)	0.03	
<b>Total (%)</b>	<b><u>100.00</u></b>	
Insoluble Residue (IR) (%)	4.25	
C3A (%)	8.29	
Freelime (CaO <sub>f</sub> ) (%)	1.29	
<b>PHYSICAL TESTS:</b>		
Air permeability - Blaine (cm <sup>2</sup> /g)	4779	
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)	127	≥60 Minutes
Final setting (minutes)	198	-
Expansion (Lechatelier's) (mm)	0.0	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 February 2020.		
 _____ PLANT MANAGER	 _____ QUALITY ASSURANCE MANAGER	



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