

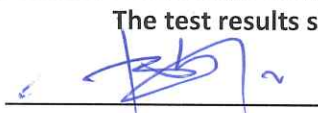
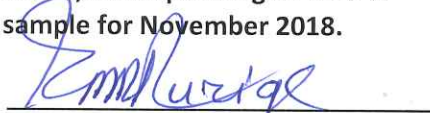


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 07/01/2019

## 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 (%)   | 9.81                 |   |
| SiO <sub>2</sub> (%)   | 20.02                |   |
| Al <sub>2</sub> O <sub>3</sub> (%)   | 4.64                 |   |
| Fe <sub>2</sub> O <sub>3</sub> (%)   | 3.37                 |   |
| CaO (%)  | 59.17                |   |
| MgO (%)  | 1.11                 | 5.0 Max.  |
| SO <sub>3</sub> (%)  | 1.92                 | 3.5 Max.  |
| K <sub>2</sub> O (%)   | 0.15                 |   |
| Na <sub>2</sub> O (%)  | 0.01                 |   |
| Cl (%)   | 0.01                 | 0.1 Max   |
| <b>Total (%)</b>   | <b><u>100.20</u></b> |   |
| Insoluble Residue (IR) (%)   | 5.78                 |   |
| C3A (%)  | 6.60                 |   |
| Freelime (CaO <sub>f</sub> ) (%)   | 2.01                 |   |
| <b>PHYSICAL TESTS:</b>   |                      |   |
| Air permeability - Blaine (cm <sup>2</sup> /g)   | 4869                 |   |
| 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)  | 80                   | ≥75 Minutes   |
| Final setting (minutes)  | 190                  | -   |
| 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.<br>The test results shown are monthly composite cement sample for November 2018. |                      |   |
| <br>PLANT MANAGER   |                      | <br>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##, T. Wagner##, R. Mbilinyi~

**Company Secretary:** Quresh Ganijee

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

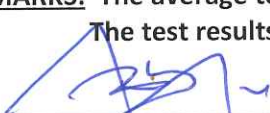
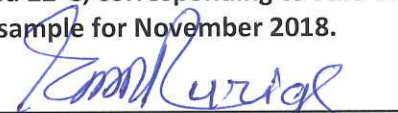


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 07/01/2019

## 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 (%)   | 6.11  |   |
| SiO <sub>2</sub> (%)   | 21.11   |   |
| Al <sub>2</sub> O <sub>3</sub> (%)   | 5.13  |   |
| Fe <sub>2</sub> O <sub>3</sub> (%)   | 3.18  |   |
| CaO (%)  | 61.47   |   |
| MgO (%)  | 0.97  | 5.0 Max.  |
| SO <sub>3</sub> (%)  | 1.90  | 3.5 Max.  |
| K <sub>2</sub> O (%)   | 0.15  |   |
| Na <sub>2</sub> O (%)  | 0.10  |   |
| Cl (%)   | 0.01  | 0.1 Max   |
| <b>Total (%)</b>   | <b><u>100.03</u></b>  |   |
|  |   |   |
|  |   |   |
| C3A (%)  | 8.22  |   |
| Freelime (CaO <sub>f</sub> ) (%)   | 2.11  |   |
| <b>PHYSICAL TESTS:</b>   |   |   |
| Air permeability - Blaine (cm <sup>2</sup> /g)   | 4690  |   |
| Compressive Strength (N/mm <sup>2</sup> ):   |   | -   |
| ISO 7days  | 29.7  | ≥16 N/mm <sup>2</sup>                             |
| ISO 28days   | 38.2  | ≥32.5 N/mm <sup>2</sup> ; ≤52.5 N/mm <sup>2</sup> |
| Vicat test: Initial setting (minutes)  | 90  | ≥75 Minutes                                       |
| Final setting (minutes)  | 230   | -   |
| 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.<br>The test results shown are monthly composite cement sample for November 2018. |   |   |
| <br>PLANT MANAGER   | <br>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###, T Wagner##, R Mbilinyi~

Company Secretary:

Quresh Ganijee

\*\*South African,

~ Independent Non-executive

# Non-executive

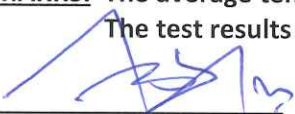
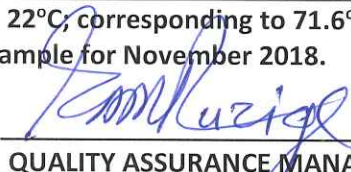


**SIMBA**  
**CEMENT**  
STRENGTH WITHIN

DATE: 07/01/2019

## 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 (%)   | 8.82                    |  |
| SiO <sub>2</sub> (%)   | 19.04                   |  |
| Al <sub>2</sub> O <sub>3</sub> (%)   | 4.43                    |  |
| Fe <sub>2</sub> O <sub>3</sub> (%)   | 2.89                    |  |
| CaO (%)  | 62.08                   |  |
| MgO (%)  | 0.81                    | 5.0 Max.   |
| SO <sub>3</sub> (%)  | 1.98                    | 3.5 Max.   |
| K <sub>2</sub> O (%)   | 0.12                    |  |
| Na <sub>2</sub> O (%)  | 0.03                    |  |
| Cl (%)   | 0.01                    | 0.1 Max  |
| <b>Total (%)</b>   | <b>100.20</b>           |  |
| Insoluble Residue (IR) (%)   | 4.68                    |  |
| C3A (%)  | 6.86                    |  |
| Freelime (CaO <sub>f</sub> ) (%)   | 1.89                    |  |
| <b>PHYSICAL TESTS:</b>   |                         |  |
| Air permeability - Blaine (m <sup>2</sup> /kg)   | 4659                    |  |
| 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)  | 90                      | ≥60 Minutes  |
|  | Final setting (minutes) | 190  |
| 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.<br>The test results shown are monthly composite cement sample for November 2018. |                         |  |
| <br>PLANT MANAGER   |                         | <br>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#\*\*, T Wagner#\*\*, R Mbilinyi~

**Company Secretary:**

Quresh Ganijee

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