



Heidelberg Materials

Tanzania Portland Cement Public Limited Company  
 P.O.Box 1950, Dar es Salaam-Tanzania  
 Telephone: +255 746 810930  
 Fax: +255 746 810931  
[Info@twigacement.com](mailto:Info@twigacement.com)  
[www.twigacement.com](http://www.twigacement.com)

## MONTHLY CERTIFICATE OF CHEMICAL & PHYSICAL TESTS TWIGA PLUS, CEM II/B-M CLASS 42.5 N JANUARY, 2025

Sampled and tested in accordance with the requirements of the Tanzanian Bureau of Standards

TZS 727-1/EAS 18-1. Equivalent to EN 197-1

CHEMICAL TEST RESULTS			
Test	Unit	Test results	Specified requirements
Loss on Ignition	[%]	7.04	No requirement
Insoluble Residues	[%]	1.42	Less than 5.0%
CaO	[%]	54.5	No requirement
SiO <sub>2</sub>	[%]	21.1	No requirement
CaO/SiO <sub>2</sub>	[-]	2.58	Not less than 2.0%
Al <sub>2</sub> O <sub>3</sub>	[%]	5.34	No requirement
Fe <sub>2</sub> O <sub>3</sub>	[%]	3.32	No requirement
MgO	[%]	1.62	Not more than 5.0%
SO <sub>3</sub>	[%]	2.46	Less than 3.5%
K <sub>2</sub> O	[%]	0.43	No requirement
Na <sub>2</sub> O	[%]	0.28	No requirement
P <sub>2</sub> O <sub>5</sub>	[%]	0.61	No requirement
TiO <sub>2</sub>	[%]	0.83	No requirement
MnO	[%]	0.08	No requirement
(Na <sub>2</sub> O+ 0.658 K <sub>2</sub> O)	[%]	0.56	No requirement
Cl <sup>-</sup>	[%]	0.001	Less than 0.10%
PHYSICAL TEST RESULTS			
Density	[kg/m <sup>3</sup> ]	3100	No requirement
Specific Surface (Blaine)	[m <sup>2</sup> /kg]	460	No requirement
Sieving Residue on 45 mic. mesh	[%]	8.3	No requirement
Initial Setting Time	[Minutes]	153	Not less than 60 minutes
Final Setting Time	[Minutes]	210	No requirement
Soundness (Expansion)	[mm]	1.0	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	17.0	More than 10.0 MPa
Compressive Strength 28* *days*	[MPa]	44.2	Between 42.5 and 62.5 Mpa

Remarks: \* The 28 days strength is the average of previous month.

Wazo Hill, 2025/02/04<sup>th</sup>

Quality Control Manager

Plant Manager

Commercial Director

Export Director  
 Hakan Gundol (Turkish)  
 Antoni Velaz (Spanish)  
 Francesco Ercanillo (Italian)

Field Engineer (Turkish)  
 Gary Wanjau (Kenyan)  
 Oswald Dube (French)