



Heidelberg Materials

Tanzania Portland Cement Public Limited Company
P.O.Box 1950, Dar es Salaam-Tanzania

Telephone: +255-746 810 930

Fax: +255-746 810 931

Info@twigacement.com

www.twigacement.com

MONTHLY CERTIFICATE OF CHEMICAL AND PHYSICAL TESTS TWIGA ORDINARY, CEM I CLASS 42.5 N

JANUARY, 2026

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 monthly average	Specified requirements
Loss on ignition	[%]	4.44	Less than 5.0%
Insoluble residue	[%]	1.04	Less than 5.0%
CaO	[%]	61.7	No Requirement
SiO ₂	[%]	20.8	No Requirement
CaO/SiO ₂	[-]	2.93	Not less than 2.0%
Al ₂ O ₃	[%]	6.14	No Requirement
Fe ₂ O ₃	[%]	3.34	No Requirement
MgO	[%]	0.91	Not more than 5.0%
SO ₃	[%]	2.64	Less than 3.5%
K ₂ O	[%]	0.35	No Requirement
Na ₂ O	[%]	0.06	No Requirement
P ₂ O ₅	[%]	0.30	No Requirement
TiO ₂	[%]	0.44	No Requirement
MnO	[%]	0.05	No Requirement
(Na ₂ O+0.658K ₂ O)	[%]	0.29	No Requirement
Cl ⁻	[%]	0.001	Less than 0.10%
PHYSICAL TEST RESULTS			
Density	[kg/m ³]	3000	No requirement
Specific Surface (Blaine)	[m ² /kg]	367	No Requirement
Sieving Residue on 45 mic.	[%]	12.2	No Requirement
Initial setting time	[minutes]	132	Not less than 60 minutes
Final setting time	[minutes]	194	No Requirement
Soundness (expansion)	[mm.]	1.0	Not more than 10 mm.
Compressive strength 2 days	[MPa]	20.2	More than 10 MPa.
Compressive strength 28 days*	[MPa]	50.0	Between 42.5 and 62.5 MPa

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

Wazo Hill, 2026/02/04th

Quality Control Manager

Ashraf Shuman
Plant Manager

Commercial Director

Board Directors:
Hakan Gurdal (Turkish)
Alfonso Velez (Spanish)
Francesco Brambilla (Italian)

Ruth Zaipuna (Tanzanian)
Gary Whitehead (British)
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