



Heidelberg Materials

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

JULY, 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	Specified requirements
Loss on Ignition	[%]	6.64	No requirement
Insoluble Residues	[%]	1.45	Less than 5.0%
CaO	[%]	58.0	No requirement
SiO ₂	[%]	20.4	No requirement
CaO/SiO ₂	[-]	2.83	Not less than 2.0%
Al ₂ O ₃	[%]	5.45	No requirement
Fe ₂ O ₃	[%]	3.88	No requirement
MgO	[%]	1.45	Not more than 5.0%
SO ₃	[%]	2.50	Less than 3.5%
K ₂ O	[%]	0.47	No requirement
Na ₂ O	[%]	0.14	No requirement
P ₂ O ₅	[%]	0.55	No requirement
TiO ₂	[%]	0.67	No requirement
MnO	[%]	0.05	No requirement
(Na ₂ O+ 0.658 K ₂ O)	[%]	0.46	No requirement
Cl ⁻	[%]	0.001	Less than 0.10%

PHYSICAL TEST RESULTS

Density	[kg/m ³]	3100	No requirement
Specific Surface (Blaine)	[m ² /kg]	460	No requirement
Sieving Residue on 45 mic. mesh	[%]	7.8	No requirement
Initial Setting Time	[Minutes]	147	Not less than 60 minutes
Final Setting Time	[Minutes]	248	No requirement
Soundness (Expansion)	[mm]	1.0	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	20.4	More than 10.0 MPa
Compressive Strength 28* *days*	[MPa]	49.0	Between 42.5 and 62.5 Mpa

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

Wazo Hill, 2026/08/03rd

Quality Control Manager

Plant Manager

Commercial Director

Board Directors:

Hakan Gurdal (Turkish)

Alfonso Velez (Spanish)

Francesco Brambilla (Italian)

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