



Heidelberg Materials

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MONTHLY CERTIFICATE OF CHEMICAL & PHYSICAL TESTS

TWIGA PLUS, CEM II/B-M CLASS 42.5 N

SEPTEMBER, 2026

Sampled and tested in accordance with the applicable standard test methods, and assessed for compliance with the requirements of the Tanzanian Bureau of Standards

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

CHEMICAL TEST RESULTS				
Test Parameters	Unit	Test results	Standard Test Methods	Specified requirements
Loss on Ignition	[%]	6.30	EN 196-2	No requirement
Insoluble Residues	[%]	1.47	EN 196-2	Less than 5.0%
CaO	[%]	57.1	EN 196-2 (XRF)	No requirement
SiO ₂	[%]	20.7	EN 196-2 (XRF)	No requirement
CaO/SiO ₂	[-]	2.75	Calculated from EN 196-2 results	Not less than 2.0%
Al ₂ O ₃	[%]	5.49	EN 196-2 (XRF)	No requirement
Fe ₂ O ₃	[%]	3.90	EN 196-2 (XRF)	No requirement
MgO	[%]	1.49	EN 196-2 (XRF)	Not more than 5.0%
SO ₃	[%]	2.47	EN 196-2 (XRF)	Less than 3.5%
K ₂ O	[%]	0.46	EN 196-2 (XRF)	No requirement
Na ₂ O	[%]	0.20	EN 196-2 (XRF)	No requirement
P ₂ O ₅	[%]	0.54	EN 196-2 (XRF)	No requirement
TiO ₂	[%]	0.68	EN 196-2 (XRF)	No requirement
MnO	[%]	0.07	EN 196-2 (XRF)	No requirement
(Na ₂ O + 0.658 K ₂ O)	[%]	0.51	Calculated from EN 196-2 results	No requirement
Cl ⁻	[%]	0.001	EN 196-2 (XRF)	Less than 0.10%
PHYSICAL TEST RESULTS				
Test Parameters	Unit	Test results	Standard Test Methods	Specified requirements
Density	[kg/m ³]	3100	SOP / validated method	No requirement
Specific Surface (Blaine)	[m ² /kg]	467	EN 196-6	No requirement
Sieving Residue on 45 mic. mesh	[%]	7.2	SOP / validated method	No requirement
Initial Setting Time	[Minutes]	169	EN 196-3	Not less than 60 minutes
Final Setting Time	[Minutes]	265	EN 196-3	No requirement
Soundness (Expansion)	[mm]	1.0	EN 196-3	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	20.5	EN 196-1	More than 10.0 MPa
Compressive Strength 28 days*	[MPa]	48.5	EN 196-1	Between 42.5 and 62.5 MPa

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

Wazo Hill, 2026/10/02nd


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Plant Manager


Commercial Director

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