



Heidelberg Materials

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MONTHLY CERTIFICATE OF CHEMICAL & PHYSICAL TESTS

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

APRIL, 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	[%]	7.48	No requirement
Insoluble Residues	[%]	1.44	Less than 5.0%
CaO	[%]	55.0	No requirement
SiO ₂	[%]	21.7	No requirement
CaO/SiO ₂	[-]	2.54	Not less than 2.0%
Al ₂ O ₃	[%]	5.64	No requirement
Fe ₂ O ₃	[%]	3.94	No requirement
MgO	[%]	1.51	Not more than 5.0%
SO ₃	[%]	2.44	Less than 3.5%
K ₂ O	[%]	0.44	No requirement
Na ₂ O	[%]	0.20	No requirement
P ₂ O ₅	[%]	0.53	No requirement
TiO ₂	[%]	0.78	No requirement
MnO	[%]	0.07	No requirement
(Na ₂ O + 0.658 K ₂ O)	[%]	0.49	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]	447	No requirement
Sieving Residue on 45 mic. mesh	[%]	7.9	No requirement
Initial Setting Time	[Minutes]	156	Not less than 60 minutes
Final Setting Time	[Minutes]	219	No requirement
Soundness (Expansion)	[mm]	1.0	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	17.8	More than 10.0 MPa
Compressive Strength 28* *days*	[MPa]	44.5	Between 42.5 and 62.5 Mpa

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

Wazo Hill, 2025/05/05th

Quality Control Manager

Plant Manager

Commercial Director

Heidelberg Materials
Heidelberg Gerdal (Turkish)
Allanco Velez (Spanish)
Heidelberg Brandiller (German)

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