



Heidelberg Materials

Tanzania Portland Cement Public Limited Company
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MONTHLY CERTIFICATE OF CHEMICAL & PHYSICAL TESTS TWIGA PLUS, CEM II/B-M CLASS 42.5 N JULY, 2024

Sampled and tested in accordance with the requirements of the Tanzanian Bureau of Standards
TZS 727-1/EAS 18-1

CHEMICAL TEST RESULTS			
Test	Unit	Test results	Specified requirements
Loss on Ignition	[%]	8.18	No requirement
Insoluble Residues	[%]	1.20	Less than 5.0%
CaO	[%]	56.3	No requirement
SiO ₂	[%]	20.2	No requirement
CaO/SiO ₂	[-]	2.78	Not less than 2.0%
Al ₂ O ₃	[%]	5.03	No requirement
Fe ₂ O ₃	[%]	3.26	No requirement
MgO	[%]	1.49	Not more than 5.0%
SO ₃	[%]	2.45	Less than 3.5%
K ₂ O	[%]	0.40	No requirement
Na ₂ O	[%]	0.23	No requirement
P ₂ O ₅	[%]	0.46	No requirement
TiO ₂	[%]	0.79	No requirement
MnO	[%]	0.08	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]	451	No requirement
Sieving Residue on 45 mic. mesh	[%]	8.6	No requirement
Initial Setting Time	[Minutes]	173	Not less than 60 minutes
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]	44.2	Between 42.5 and 62.5 Mpa

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

Wazo Hill, 2024/08/05th


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Quality Control Manager


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Plant Manager


Ag.
Commercial Director

Board Director
Hakan Gurdal (Turkish)
Alfonso Velaz (Spanish)
Francesco Brambilla (Italian)

Rufi Zepora (Tanzanian)
Gary Whitehead (British)
Oswald Urassa (Tanzanian)