



HEIDELBERGCEMENT Group

Tanzania Portland Cement Public Limited Company
 P.O.Box 1950, Dar es Salaam-Tanzania
 Telephone: +255 746 810930
 Fax: +255 746 810931
www.twigacement.com

MONTHLY CERTIFICATE OF CHEMICAL & PHYSICAL TESTS TWIGA PLUS, CEM II/B-M CLASS 42.5 N AUGUST, 2023

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	[%]	8.5	No requirement
Insoluble Residues	[%]	1.2	Less than 5.0%
CaO	[%]	57.7	No requirement
SiO ₂	[%]	19.6	No requirement
CaO/SiO ₂	[-]	3.0	Not less than 2.0%
Al ₂ O ₃	[%]	5.0	No requirement
Fe ₂ O ₃	[%]	3.3	No requirement
MgO	[%]	1.3	Not more than 5.0%
SO ₃	[%]	2.4	Less than 3.5%
K ₂ O	[%]	0.37	No requirement
Na ₂ O	[%]	0.17	No requirement
P ₂ O ₅	[%]	0.08	No requirement
TiO ₂	[%]	0.50	No requirement
MnO	[%]	0.06	No requirement
(Na ₂ O+ 0.658 K ₂ O)	[%]	0.41	No requirement
Cl ⁻	[%]	0.001	Less than 0.10%
PHYSICAL TEST RESULTS			
Specific Surface (Blaine)	[m ² /kg]	456	No requirement
Sieving Residue on 45 mic. mesh	[%]	8.7	No requirement
Initial Setting Time	[Minutes]	135	Not less than 60 minutes
Soundness (Expansion)	[mm]	1.0	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	17.7	More than 10.0 MPa
Compressive Strength 28* *days*	[MPa]	44.4	Between 42.5 and 62.5 Mpa

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

Wazo Hill, 2023/09/08th

Quality Control Manager

Plant Manager

Commercial Director

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

Ruth Zaibuna (Tanzanian)
 Gary Whitehead (British)
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