

HEIDELBERGCEMENT Group

Tanzania Portland Cement Public Limited Company P.O.Box 1950,Dar es Salaam-Tanzania

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

Sampled and tested in accordance with the requirements of the Tanzanian Bureau of Standards

TZS 727-1/EAS 18-1

	CHEMICAL TH	EST RESULTS	
Test	Unit	Test results	Specified requirements
Loss on Ignition	[%]	9.4	No requirement
Insoluble residue	[%]	1.2	Less than 5.0%
CaO	[%]	58.8	No requirement
SiO ₂	[%]	18.3	No requirement
CaO/SiO ₂	[-]	3.2	Not less than 2.0%
Al ₂ O ₃	[%]	4.9	No requirement
Fe ₂ O ₃	[%]	2.8	No requirement
MgO	[%]	0.7	Not more than 5.0%
SO ₃	[%]	2.6	Less than 3.5%
K ₂ O	[%]	0.3	No requirement
Na ₂ O	[%]	0.2	No requirement
P ₂ O ₅	[%]	0.1	No requirement
TiO ₂	[%]	0.3	No requirement
MnO	[%]	0.1	No requirement
$(Na_2O + 0.658K_2O)$	[%]	0.4	No requirement
Cl	[%]	0.001	Less than 0.10%
	PHYSICAL TE	ST RESULTS	
Density	[kg/m³]	3000	No requirement
Specific Surface (Blaine)	[m²/kg]	442	No requirement
Sieving Residue on 45 mic. mesh	[%]	9.5	No requirement
Initial Setting Time	[Minutes]	120	Not less than 60 minutes
Soundness (Expansion)	[mm]	1.0	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	17.5	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, 2023/07/22th

Quality Control Manager

Plant Manager

Ag' Commercial Director

Board Directors: Hakan Gurdal (Turkish) Alfonso Velez (Spanish) Francesco Brambilla (Italian) Ruth Zaipuna (Tanzanian) Gary Whitehead (British) Oswald Urassa (Tanzanian)