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## MONTHLY CERTIFICATE OF CHEMICAL & PHYSICAL TESTS TWIGA PLUS, CEM II/B-L CLASS 42.5 N DECEMBER, 2022

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	[%]	9.6	No requirement
Insoluble residue	[%]	1.2	Less than 5.0%
CaO	[%]	56.5	No requirement
SiO <sub>2</sub>	[%]	18.6	No requirement
CaO/SiO <sub>2</sub>	[-]	3.0	Not less than 2.0%
Al <sub>2</sub> O <sub>3</sub>	[%]	4.6	No requirement
Fe <sub>2</sub> O <sub>3</sub>	[%]	2.6	No requirement
MgO	[%]	0.9	Not more than 5.0%
SO <sub>3</sub>	[%]	2.4	Less than 3.5%
K <sub>2</sub> O	[%]	0.33	No requirement
Na <sub>2</sub> O	[%]	0.14	No requirement
P <sub>2</sub> O <sub>5</sub>	[%]	0.05	No requirement
TiO <sub>2</sub>	[%]	0.39	No requirement
MnO	[%]	0.06	No requirement
(Na <sub>2</sub> O+ 0.658K <sub>2</sub> O)	[%]	0.36	No requirement
Cl <sup>-</sup>	[%]	0.001	Less than 0.10%
PHYSICAL TEST RESULTS			
Density	[kg/m <sup>3</sup> ]	3000	No requirement
Specific Surface (Blaine)	[m <sup>2</sup> /kg]	441	No requirement
Sieving Residue on 45 mic. mesh	[%]	9.5	No requirement
Initial Setting Time	[Minutes]	115	Not less than 60 minutes
Soundness (Expansion)	[mm]	1.0	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	18.5	More than 10.0 MPa
Compressive Strength 28 days*	[MPa]	44.0	Between 42.5 and 62.5 Mpa

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

Wazo Hill, 2023/01/05<sup>th</sup>

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Plant Manager

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