

## Heidelberg Materials

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## MONTHLY CERTIFICATE OF CHEMICAL AND PHYSICAL TESTS TWIGA ORDINARY, CEM I CLASS 42.5 N

## OCTOBER,2024

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 monthly average	Specified requirements
Loss on ignition	[%]	4.45	Less than 5.0%
Insoluble residue	[%]	1.00	Less than 5.0%
CaO	[%]	60.7	No Requirement
SiO <sub>2</sub>	[%]	20.6	No Requirement
CaO/SiO <sub>2</sub>	[-]	2.95	Not less than 2.0%
Al <sub>2</sub> O <sub>3</sub>	[%]	4.96	No Requirement
Fe <sub>2</sub> O <sub>3</sub>	[%]	3.34	No Requirement
MgO	[%]	0.86	Not more than 5.0%
$SO_3$	[%]	2.50	Less than 3.5%
K <sub>2</sub> O	[%]	0.38	No Requirement
Na <sub>2</sub> O	[%]	0.16	No Requirement
$P_2O_5$	[%]	0.31	No Requirement
TiO <sub>2</sub>	[%]	0.46	No Requirement
MnO	[%]	0.06	No Requirement
(Na <sub>2</sub> O+0.658K <sub>2</sub> O)	[%]	0.42	No Requirement
Cl	[%]	0.001	Less than 0.10%
	PHYSICA	AL TEST RESULTS	
Density	[kg/m³]	3000	No requirement
Specific Surface (Blaine)	[m²/kg]	356	No Requirement
Sieving Residue on 45 mic.	[%]	13.0	No Requirement
Initial setting time	[minutes]	145	Not less than 60 minutes
Soundness (expansion)	[mm.]	1.0	Not more than 10 mm.
Compressive strength 2 days	[MPa]	20.2	More than 10 MPa.
Compressive strength 28 days*	[MPa]	50.0	Between 42.5 and 62.5 MPa

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

Wazo Hill, 2024/11/05th

Quality Control Manager

Plant Manager

Commercial Director

Princip (Asector)
Philosophy Guron (Turkich)
Alterno Venez (Sportello Utalia)
Princip programma (Sportello Utalia)

Kelli ajanen jaranen. Servivaniaren jaren 1. Denoli Geran (1. marilia)