Heidelberg Materials

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 RAPID, CEM II/B-L CLASS 42.5 R

SEPTEMBER,2026

Sampled and tested in accordance with the applicable standard test methods, and assessed for compliance with the requirements of the Tanzanian Bureau of Standards

TZS 727-1/EAS 18-1. Equivalent to EN 197-1

CHEMICAL TEST RESULTS				
Test Parameters	**Unit**	**Test results**	**Standard Test Methods**	**Specified requirements:**
Loss on Ignition	[%]	6.28	EN 196-2	No requirement
Insoluble Residues	[%]	1.44	EN 196-2	Less than 5.0%
CaO	[%]	57.2	EN 196-2 (XRF)	No requirement
SiO_2	[%]	20.5	EN 196-2 (XRF)	No requirement
CaO/SiO_2	[-]	2.79	Calculated from EN 196-2 results	Not less than 2.0%
Al_2O_3	[%]	5.47	EN 196-2 (XRF)	No requirement
Fe_2O_3	[%]	3.90	EN 196-2 (XRF)	No requirement
MgO	[%]	1.43	EN 196-2 (XRF)	Not more than 5.0%
SO_3	[%]	2.49	EN 196-2 (XRF)	Less than 3.5%
K_2O	[%]	0.45	EN 196-2 (XRF)	No requirement
Na_2O	[%]	0.19	EN 196-2 (XRF)	No requirement
P_2O_5	[%]	0.50	EN 196-2 (XRF)	No requirement
TiO_2	[%]	0.68	EN 196-2 (XRF)	No requirement
MnO	[%]	0.07	EN 196-2 (XRF)	No requirement
$(Na_2O+ 0.658\ K_2O)$	[%]	0.49	Calculated from EN 196-2 results	No requirement
Cl^-	[%]	0.001	EN 196-2 (XRF)	Less than 0.10%
PHYSICAL TEST RESULTS				
Test Parameters	**Unit**	**Test results**	**Standard Test Methods**	**Specified requirements:**
Density	[kg/m3]	3100	Plant SOP / validated method	No requirement
Specific Surface (Blaine)	[m^2/kg]	465	EN 196-6	No requirement
Sieving Residue on 45 mic. mesh	[%]	7.5	Plant SOP / validated method	No requirement
Initial Setting Time	[Minutes]	168	EN 196-3	Not less than 60 minutes
Final Setting Time	[Minutes]	261	EN 196-3	No requirement
Soundness (Expansion)	[mm]	1.0	EN 196-3	Not more than 10.0 mm
Compressive Strength 2 days	[MPa]	20.5	EN 196-1	More than 20.0 MPa
Compressive Strength 28 days*	[MPa]	48.5	EN 196-1	Between 42.5 and 62.5 MPa

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

Wazo Hill, 2026/10/02nd

Quality Control Manager

Plant Manager

Commercial Director

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