HEIDELBERGCEMENT Group

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MONTHLY CERTIFICATE OF CHEMICAL AND PHYSICAL TESTS

TWIGA EXTRA, CEM II/B-L CLASS 32.5 R

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 monthly average	Specified requirements
Loss on ignition	[%]	13.7	No Requirement
Insoluble Residue	[%]	1.2	Less than 5.0%
CaO	[%]	55.4	No Requirement
SiO_2	[%]	17.8	No Requirement
CaO/SiO_2	[-]	3.1	Not less than 2.0%
Al_2O_3	[%]	4.4	No Requirement
Fe_2O_3	[%]	2.6	No Requirement
MgO	[%]	0.9	Not more than 5.0%
SO_3	[%]	2.4	Less than 3.5%
K_2O	[%]	0.33	No Requirement
Na_2O	[%]	0.12	No Requirement
P_2O_5	[%]	0.05	No Requirement
TiO_2	[%]	0.35	No Requirement
MnO	[%]	0.06	No Requirement
$(Na_2O+0.658K_2O)$	[%]	0.34	No Requirement
Cl	[%]	0.002	Less than 0.10%
PHYSICAL TEST RESULTS			
Density	[kg/m^3]	3100	No requirement
Specific Surface (Blaine)	[m^2/kg]	453	No Requirement
Sieving Residue on 45 mic.	[%]	10.0	No Requirement
Initial setting time	[minutes]	118	Not less than 75 minutes
Soundness (expansion)	[mm.]	1.0	Not more than 10 mm.
Compressive strength 2 days	[MPa]	14.7	More than 10 MPa.
Compressive strength 28 days*	[MPa]	35.4	Between 32.5 and 52.5 MPa

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

Wazo Hill, 2023/01/05th

Quality Control Manager

Plant Manager

Commercial Director

Yves Pedigne
Commercial Director
TPC PLC

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Hakan Gurdal (Turkish)
Alfonso Velez (Spanish)
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