

CERTIFICATE OF QUALITY

Analyzed by S.C.A.E.K (Algeria)			DATE
According to NF EN 196-2 (ASTM C114) « CLINKER SPECIAL »			23/02/2026
Silica Oxide	$21 \leq \text{SiO}_2 \leq 23$	%	21.36
Aluminium Oxide	$4 \leq \text{Al}_2\text{O}_3 \leq 5.5$	%	4.53
Ferric Oxide	$4 \leq \text{Fe}_2\text{O}_3 \leq 5.5$	%	5.15
Calcium Oxide	$\text{CaO} \geq 65$	%	65.54
Magnesium Oxide	$\text{MgO} \leq 1.6$	%	1.56
Sulphur Trioxide-IR	$\text{SO}_3 \leq 1$	%	0.42
Potassium Oxide	$\text{K}_2\text{O} \leq 0.5$	%	0.32
Sodium Oxide	$\text{Na}_2\text{O} \leq 0.4$	%	0.17
Loss On Ignition (PAF)	$\text{LOI} \leq 0.5$	%	0.27
Free Lime (CaO libre)	$\text{F.CaO} \leq 1.5$	%	0.84
Bulk Density (Densité)	$1200 \leq [B.D. (5 \pm 7) \text{ mm}] \leq 1350$	g/l	1320
Tri-calcium Silicate	$\text{C3S} = [4.071 * \text{CaO} - (7.6 * \text{SiO}_2 - 6.72 * \text{Al}_2\text{O}_3 - 1.43 * \text{Fe}_2\text{O}_3)] \geq 60$	%	66.67
Di-calcium Silicate	$\text{C2S} \leq 20$	%	10.98
Tri calcium Aluminate	$\text{C3A} \leq 5$	%	3.30
Tetra calcium Alumino-Ferrite	$10 \leq \text{C4AF} \leq 16$	%	15.66
IR (Residue insoluble)	$\text{IR} \leq 0.5$	%	0.25
chloride Cl^-	$\text{Cl}^- \leq 0.1$	%	0.003

Le chef de service contrôle qualité

BOUGHETALA AB
Chef de Service
Contrôle Qualité