

PORTLAND CEMENT CLINKER Ref #6 TYPICAL PROPERTIES

Portland Cement Clinker According to : EN 197-1 : 2000 CEM I 42.5 N / ASTM C-150 TYPE I

Chemical Compositions	Unit	Range Specification	
		Min	Max
Silicon Dioxide (SiO ₂)	%	21,00	22,00
Aluminium Oxide (Al ₂ O ₃)	%	4,80	5,50
Ferric Oxide (Fe ₂ O ₃)	%	3,80	4,40
* Calcium Oxide (CaO)	%	65,00	65,50
Magnesium Oxide (MgO)	%	1,50	1,90
Sulfur Trioxide (SO ₃)	%	0,50	0,90
Sodium Oxide (Na ₂ O)	%	0,20	0,30
Potassium Oxide (K ₂ O)	%	0,50	0,60
Total Alkalies (Na ₂ O + 0,658 x K ₂ O)	%	0,60	0,65
Chloride (Cl)	%	0,009	0,015
Free Lime (F.CaO)	%	-	2,00
Loss on Ignition (LOI)	%	-	1,00
Insoluble Residue (IR)	%	-	0,50
By Calculation			
Silica Modulus (S.M.)		2,12	2,60
Alumina Modulus (A.M.)		1,15	1,35
Lime Saturation Factor (L.S.F)		0,90	0,96
** Tricalcium Silicate (C ₃ S)		58,00	65,00
Dicalcium Silicate (C ₂ S)		13,20	18,50
Tricalcium Aluminate (C ₃ A)		6,00	7,50
Tetra Calcium Aluminoferrite (C ₄ AF)		11,20	13,00
Particle Size Distribution (by Sieve Analysis)			
0 - 10mm		45,00	55,00
0 - 30 mm		87,00	97,00
30-40 mm		2,50	10,00
≥ 40 mm		0,50	3,00
Density tons/m ³		1,25	1,45

Notes:

* Calcium Oxide (CaO) = Total Lime

** Tri Calcium Silicate (C₃S) = $4,071 \times \text{CaO} - (7,6 \times \text{SiO}_2 + 6,718 \times \text{Al}_2\text{O}_3 + 1,43 \times \text{Fe}_2\text{O}_3 + 2,85 \times \text{SO}_3)$