

PORTLAND CEMENT CLINKER Ref #3 TYPICAL PROPERTIES

Chemical Compositions	Unit	Clinker Ranges	Testing Method
Calcium Oxide (CaO)	%	64.00 - 65.80	ASTM C-114
Silicon Dioxide (SiO ₂)	%	21.00 - 22.50	ASTM C-114
Aluminium Oxide (Al ₂ O ₃)	%	4.80 - 6.00	ASTM C-114
Ferric Oxide (Fe ₂ O ₃)	%	3.00 - 4.20	ASTM C-114
Magnesium Oxide (MgO)	%	1.50 - 2.80	ASTM C-114
Free Lime (F.CaO)	%	0.80 - 1.50	ASTM C-114
Sulfur Trioxide (SO ₃)	%	< 0.50	ASTM C-114
Insoluble Residue (IR)	%	0.30 - 0.70	ASTM C-114
Loss on Ignition (LOI)	%	0.10 - 1.00	ASTM C-114
Chloride (Cl)	%	0.01 - 0.05	ASTM C-114
Total Alkalies (As Na ₂ O)	%	0.50 - 0.80	ASTM C-114
Moisture	%	< 0.50	ASTM C-114
Lime Saturation Factor (LSF)		0.92 - 0.95	ASTM C-150
Tricalcium Silicate (C ₃ S)		55.00 - 58.00	ASTM C-150
Dicalcium Silicate (C ₂ S)		18.00 - 25.00	ASTM C-150
Tricalcium Aluminate (C ₃ A)		5.00 - 7.50	ASTM C-150
Tetra Calcium Aluminoferrite (C ₄ AF)		9.50 - 13.50	ASTM C-150
C ₃ S + C ₂ S		75.00 - 80.00	ASTM C-150
S.M.		2.30 - 2.60	ASTM C-150
A.M.		1.10 - 1.50	ASTM C-150
H.M.		2.0 - 2.20	ASTM C-150
Comprehensive Strength & Setting Time (Used 95% Clinker & 5% Gypsum)			
2 Days		24 MPa Minimum	EN 196-1
3 Days		28 MPa Minimum	EN 196-1
28 Days		52 MPa Minimum	EN 196-1
Initial		100 - 150 Minutes	ASTM C-191
Final		170 - 220 Minutes	ASTM C-191
Clinker Size Specification			
Below 1 mm		12.0 % Maximum	ASTM C-136
Above 1 mm & Below 25 mm		78.0 % Minimum	ASTM C-136
Above 30 mm		3.00 - 5.00 %	ASTM C-136
Bulk Density		1.40 to 1.55 Kg/L	
Liter Weight		1.25 to 1.40 Kg/L	