
CEMENT CLINKER IN BULK SUITABLE TO PRODUCE OPC TYPE I – ASTM C150

CHEMICAL PROPERTIES	UNIT	Testing method	Chemical analysis (%)
Cao	%	ASTM C114-09	Min 65.0
SiO ₂	%		20.0-23.0
Al ₂ O ₃	%		Max 6.0
Fe ₂ O ₃	%		Max 4.0
MgO	%		Max 3.5
Free Lime (F-Cao)	%		Max 2.0
SO ₃	%		Max 1.0
Insoluble Residue (IR)	%		Max 0.5
LOI	%		Max 1.0
Equivalent alkalies	%		Max 0.8
C3S	%	ASTM C150-09	Min 55.0
C2S	%		Max 25.0
C3A	%		Max 12.0
C4AF	%		Max 13.0
Lime Saturation Factor	%		Min 92.0
PARTICLE SIZE (5mm – 25mm)	%	By sieve	≥ 40
Moisture	%	ASTM C136	Max 1.0

Calculation Formula:

$$C3S = 4.071\%CaO - 7.602\%SiO_2 - 6.712\%Al_2O_3 - 1.43\%Fe_2O_3,$$

$$C2S = (2.867x\% SiO_2) - (0.7544 x \% C3S),$$

$$C3A = (2.650x\% Al_2O_3) - (1.692x\% Fe_2O_3),$$

$$C4AF = 3.043 x \% Fe_2O_3$$

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