



Laboratory Test Certificate

PORTLAND CEMENT - TYPE I/II

Source: Asia Cement-Hualein Plant, Taiwan

Chemical (C114)

Item (%)	Value	Limit
Silicon Dioxide (SiO ₂)	20.1	
Aluminum Oxide (Al ₂ O ₃)	3.96	6.0 Max
Ferric Oxide (Fe ₂ O ₃)	3.0	6.0 Max
Calcium Oxide (CaO)	62.4	
Magnesium Oxide (MgO)	3.5	6.0 Max
Sulfur Trioxide (SO ₃)	2.8	3.0 Max
Sodium Oxide (Na ₂ O)	0.16	
Potassium Oxide (K ₂ O)	0.55	
Loss on Ignition (LOI)	2.45	3.5 Max
Insoluble Residue	0.84	1.50 Max
Potential phase composition (%)		
C ₃ S	62.4	
C ₂ S	10.5	
C ₃ A	5.5	8 Max
C ₄ AF	9.1	
Alkali Equivalent (NaEq)	0.52	

Physical Properties

Comp. Strength	Value	(Min.)
3 Days	4050 psi	1740 psi
	(27.9 MPa)	(12.0 MPa)
7 Days	5190 psi	2760 psi
	(35.8 MPa)	(19.0 MPa)
28 Days**	6960 psi	4060*psi
	(47.9 MPa)	(28.0*MPa)
Blaine Fineness:	3920 cm ² /gr	2600 Min.
Air Content:	7.5 %	12.0 %Max
Vicat C191 Init Set:	160	min. 45 Min
Vicat C191 Final Set:	225	min. 375 Max
Paste False Set:	85 %	50*% Min

* - optional requirements , Table 4.

** - 28 Days Compressive Strength from previous month.

We certify that the above described cement, at the time of shipment, meets the standard chemical and physical requirements of ASTM C150-22, Type I/II, low alkali (Table 1).

Cement Division

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