



Laboratory Test Certificate

PORTLAND CEMENT - TYPE I/II

Source: Asia Cement-Hualein Plant, Taiwan

Chemical (C114)			Physical Properties		
Item (%)	Value	Limit	Comp. Strength	Value	(Min.)
Silicon Dioxide (SiO ₂)	20.2		3 Days	3940 psi	1740 psi
Aluminum Oxide (Al ₂ O ₃)	4.0	6.0 Max		(27.1 MPa)	(12.0 MPa)
Ferric Oxide (Fe ₂ O ₃)	2.99	6.0 Max	7 Days	5260 psi	2760 psi
Calcium Oxide (CaO)	62.6			(36.2 MPa)	(19.0 MPa)
Magnesium Oxide (MgO)	3.5	6.0 Max	28 Days ***	6520 psi	4060* psi
Sulfur Trioxide (SO ₃)	2.8	3.0 Max		(44.9 MPa)	(28.0*MPa)
Sodium Oxide (Na ₂ O)	0.15				
Potassium Oxide (K ₂ O)	0.54		Blaine Fineness:	4100 cm ² /gr	2600 Min.
Loss on Ignition (LOI)	2.66	3.5 Max	Air Content:	7.7 %	12.0 %Max
Insoluble Residue	0.57	1.50 Max			
Potential phase composition (%)			Vicat C191 Init Set:	155	min. 45 Min
C ₃ S	62.0		Vicat C191 Final Set:	220	min. 375 Max
C ₂ S	11.1		Autoclave Expansion:	0.04 %	0.80 %Max
C ₃ A	5.6	8 Max	Paste False Set:	87 %	50*% Min
C ₄ AF	9.1				
Alkali Equivalent (NaEq)	0.51				


* - 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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