



Manufacturer's Certification

Report Date: 10/11/2025

We hereby certify that Alaska Basic Industries Type I/II Cement meets the standard requirements of ASTM C150 and AASHTO M85 specification for Type I and Type II cements. Reported are the average chemical and physical data for the lot.

Lot #: 25-231

Type I / II Cement

Source: Ninh Binh, Vietnam

Chemical Properties, (ASTM C114)	ASTM C150 and AASHTO M85 Requirements		Analysis	Limestone
	Type I	Type II	Results	Analysis
Silicon dioxide (SiO ₂), %	---	---	19.4	2.6
Aluminum oxide (Al ₂ O ₃), max, %	---	6.0	4.5	0.3
Ferric oxide (Fe ₂ O ₃), max, %	---	6.0	4.4	0.3
Calcium oxide (CaO), %	---	---	62.5	51.8
Magnesium oxide (MgO), max, %	6.0	6.0	3.2	2.1
Sulfur trioxide (SO ₃), max, %	3.0	3.0	2.8	0.2
Loss on ignition (LOI), max, %	3.5	3.5	2.2	
Insoluble residue (IR), max, %	1.5	1.5	0.6	Base
Alkalies (Na ₂ O+0.658*K ₂ O), %	---	---	0.56	Cement
Tricalcium silicate (C ₃ S), %	---	---	56	58
Dicalcium silicate (C ₂ S), %	---	---	13	13
Tricalcium aluminate (C ₃ A), max, %	---	8	4	4
Tetracalcium aluminoferrite (C ₄ AF), %	---	---	13	14
CO ₂ , %	---	---	1.6	
Limestone addition, max, %	5.0	5.0	3.6	
CaCO ₃ in Limestone, min, %	70	70	98	

Physical Properties

Air content of mortar, max, volume %, (C185)	12	12	6
Blaine Fineness, min, m ² /kg, (C204)	260	260	390
Autoclave expansion, max, %, (C151)	0.80	0.80	0.18
Compressive Strength, min, (C109)			
1 Day, psi	---	---	2180
3 Day, MPa	12.0	10.0	26.0
3 Day, psi	1740	1450	3760
7 Day, MPa	19.0	17.0	31.0
7 Day, psi	2760	2470	4500
28 Day, MPa	---	---	41.6
28 Day, psi	---	---	6040
Vicat Setting Time, min-max, minutes, (C191)	45 - 375	45 - 375	125

Apparatus and methods used in this laboratory have been checked by the Cement and Concrete Reference Laboratory of the National Institute of Standards and Technology. A copy of the report detailing their findings is available upon request. Major oxides are analyzed in accordance with ASTM C114.

X. Schlee

Quality Control Manager