ALASKA BASIC INDUSTRIES
A Subsidiary of Knife River Corporation

SUBSIDIARIES:
ANCHORAGE SAND & GRAVEL CO., INC.
FAIRBANKS MATERIALS, INC.

Manufacturer's Certification

Report Date: 7/13/2026

We hereby certify that CalPortland 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 #: 26-165 **Type I / II Cement**

Source: Nghe An, Vietnam

	ASTM C150 and AASHTO M85 Requirements		Analysis	Limestone
Chemical Properties, (ASTM C114)	**Type I**	**Type II**	**Results**	**Analysis**
Silicon dioxide (SiO_2), %	---	---	**19.3**	**2.3**
Aluminum oxide (Al_2O_3), max, %	---	6.0	**4.2**	**0.2**
Ferric oxide (Fe_2O_3), max, %	---	6.0	**4.7**	**0.5**
Calcium oxide (CaO), %	---	---	**61.7**	**50.2**
Magnesium oxide (MgO), max, %	6.0	6.0	**3.9**	**3.4**
Sulfur trioxide (SO_3), max, %	3.0	3.0	**2.5**	**0.3**
Loss on ignition (LOI), max, %	3.5	3.5	**2.2**	
Insoluble residue (IR), max, %	1.5	1.5	**0.5**	**Base**
Alkalies ($Na_2O+0.658*K_2O$), %	---	---	**0.57**	**Cement**
Tricalcium silicate (C_3S), %	---	---	**54**	**56**
Dicalcium silicate (C_2S), %	---	---	**14**	**15**
Tricalcium aluminate (C_3A), max, %	---	8	**3**	**3**
Tetracalcium aluminoferrite (C_4AF), %	---	---	**14**	**15**
CO_2, %	---	---	**2.0**	
Limestone addition, max, %	5.0	5.0	**4.6**	
$CaCO_3$ in Limestone, min, %	70	70	**97**	
Physical Properties				
Air content of mortar, max, volume %, (C185)	12	12	**7**	
Blaine Fineness, min, m^2/kg, (C204)	260	260	**396**	
Autoclave expansion, max, %, (C151)	0.80	0.80	**0.04**	
Compressive Strength, min, (C109)				
1 Day, psi	---	---	**2090**	
3 Day, MPa	12.0	10.0	**22.2**	
3 Day, psi	1740	1450	**3220**	
7 Day, MPa	19.0	17.0	**31.8**	
7 Day, psi	2760	2470	**4620**	
28 Day, MPa	---	---	**42.2**	
28 Day, psi	---	---	**6120**	
Vicat Setting Time, min-max, minutes, (C191)	45 - 375	45 - 375	**143**	

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