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Cement Mill Certificate of Analysis

Alaska Basic Industries hereby certify that cement represented by this analysis complies with the current requirements for Type I and Type II of **ASTM C150-11** specifications, and **AASHTO M85-11**.

Portland Cement: Type III Low Alkali

Date Shipped: October 16, 2023

Meets: ASTM C150-11 AASHTO M85-18

Lot # / Ship: #0000101620231 MV Kodiak Island

<u>Chemical Composition:</u>	<u>Results:</u>	<u>Type III Requirements</u>
Silicon Dioxide (SiO ₂):	20.2%	---
Aluminum Oxide (Al ₂ O ₃): %Max	4.7%	---
Ferric Oxide (Fe ₂ O ₃):% Max	3.1%	---
Calcium Oxide (CaO):	62.0%	---
Magnesium Oxide (MgO): % Max	3.8%	6.0%
Sulfur Trioxide (SO ₃):% Max	3.1%	3.5%
Loss On Ignition% Max:	1.2%	3.0%
Insoluble Residue:% Max	0.20%	0.75%
Tricalcium Silicate (C ₃ S):	53	--
Dicalcium Silicate (C ₂ S):	18	--
Tricalcium Aluminate (C ₃ A):% Max	7.0%	15.0%
Tetracalcium Aluminoferrite (C ₄ AF):	9.00%	--
Total Alkali as NaEq:% Max	0.58%	0.60%
Limestone, 5 % max	0.8%	5.0%
CaCO ₃ in Limestone, 70% min	88%	70%

Physical Properties:

Blaine (min m ² /kg.):	561	260
Vicat, Initial Set (mins.) <i>N</i> Min	58	45
Vicat, Final Set (mins.): <i>Max</i>	115	375
Autoclave Expansion:% Max	0.09%	0.80%
False Set:	88%	--
Air Content (% Max by vol.):	6.00%	12.00%

Mortar Cube Breaks:

Compressive Strength (PSI):		
1 Day _____	2300	1740
3 Days _____	4600	3480
7 Days _____	5380	-

Notes

1. **Test Results:** This mill test represents typical data.
2. The percent of Limestone is slowly being increased, which has no effect on the performance of concrete
3. **Origination:** SsangYong, So. Korea

Patrick Walter

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Type III

Terminals in
Anchorage • Fairbanks