



MITSUBISHI CEMENT CORPORATION

CERTIFICATE OF TEST

Source: Cushenbury Plant

Limestone Modified Portland Cement - Block

Date: 08/14/2026

ASTM designation: C 1157 – 11 for Type HE

Production Period

From: 07/12/2026

To: 07/26/2026

Chemical Composition:

ASTM Limits

Test Results

Silicon Dioxide (SiO ₂), %	----	19.5
Aluminum Oxide (Al ₂ O ₃), %	----	5.4
Ferric Oxide (Fe ₂ O ₃), %	----	1.2
Calcium Oxide (CaO), %	----	63.9
Magnesium Oxide (MgO), %	----	2.0
Sulfur Trioxide (SO ₃), %	----	3.4
Loss on Ignition, %	----	5.2
Insoluble Residue, %	----	1.1
Total Alkali (%Na ₂ O + 0.658 * %K ₂ O), %	----	0.42
Tricalcium Silicate (C ₃ S), [b] %	----	52
Tricalcium Aluminate (C ₃ A), [b] %	----	12
CO ₂ , %	----	3.5
Limestone, %	15 Max	9.2
Limestone Purity, %	----	86
Free Lime, %	----	1.2

PHYSICAL RESULTS:

Blaine Fineness Average (m ² /kg)	----	524
325 Mesh (% Passing)	----	99.2
Autoclave Expansion (%)	0.80 Max	0.13
Mortar Bar Expansion (%)	0.020 Max	0.012
Time of Set Initial Vicat (minutes)	45 / 420 Min. / Max	60
Air Content (% by Volume)	12 Max	8.9
C1702 Heat of Hydration (J/g)	(a)	390
Color (L value)	(a)	76

Compressive Strength Test:

ASTM Limits

MPA PSI

	MPA	psi		
1 Day	12.0	1740	Min.	20.4 2970
3 Day	24.0	3480	Min.	30.7 4450
7 Day	----	----		35.4 5140
28 Day	----	----		43.6 6340

June 2026

This cement has been sampled and tested in accordance with ASTM standard methods and procedures. All test results are certified to comply with the type specification designated above. No other warranty is made or implied. We are not responsible for improper use or workmanship. The MCC laboratory is AASHTO accredited. [a] For information only. [b] Adjusted per ASTM C150 A1.6

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Cushenbury plant

Evan Coss
Quality Control Manager

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Additional Data

Limestone Addition

% Addition:	9.2
SiO ₂ (%)	7.2
Al ₂ O ₃ (%)	1.3
Fe ₂ O ₃ (%)	0.4
CaO (%)	49.2
SO ₃ (%)	0.0

Base Cement Phase Composition

C ₃ S	57
C ₂ S	16
C ₃ A	13
C ₄ AF	4

We certify that the above described data represents the material used in the cement manufactured during the production period indicated.

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