

 **MITSUBISHI CEMENT CORPORATION**
CERTIFICATE OF TEST

Source: Cushenbury Plant

Plastic (Stucco) Cement

Date: 02/20/2019

ASTM designation: C 91 - 12 for Masonry Cement – Type M	Production Period
ASTM designation: C 1328 - 12 for Plastic (Stucco) Cement – Type M	From: 01/13/2019
UBC Standard: 21 - 11 for Cement, Masonry – Type M	To: 01/13/2019
UBC Standard: 25 – 1 for Plastic Cement	

Chemical Composition:

Test Results

Silicon Dioxide (SiO ₂), %	19.7
Aluminum Oxide (Al ₂ O ₃), %	4.4
Ferric Oxide (Fe ₂ O ₃), %	2.6
Calcium Oxide (CaO), %	62.4
Magnesium Oxide (MgO), %	2.4
Sulfur Trioxide (SO ₃), %	2.3
Loss on Ignition (LOI), %	6.4
Insoluble Residue	1.0
Total Alkali (%Na ₂ O + 0.658 * %K ₂ O)	0.45
Tricalcium Silicate (C ₃ S), %	68
Tricalcium Aluminate (C ₃ A), %	7
CO ₂ , %	5.0
Limestone, %	16.1
CaCO ₃ Limestone Purity, %	91

PHYSICAL RESULTS:

ASTM C-91 & C-1328 Limits

Test Results

Blaine Fineness (m ² /kg)		489
325 Mesh (% Passing)	76 Min.	98.2
Autoclave Expansion (%)	1.0 Max.	0.05
Time of Set Initial Vicat (minutes)	90 Min. / 1000 Max.	155
Air Entrainment (% Volume)	8 Min. / 19 Max.	14.4
Water Retention, % of Original Flow	70 Min.	83

Compressive Strength Test:

ASTM C-91 & C-1328 Limits
MPA psi

MPA PSI

1 Day		12.2	1770
3 Day		18.7	2710
7 Day	12.4 1800 Min.	25.2	3660
28 Day	20.0 2900 Min.	29.9	4340

This cement has been sampled and tested in accordance with ASTM standard methods and procedures. All tests 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.

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Cushenbury plant



Tom Gepford
Quality Control Manager

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Additional Data

Limestone Addition

% Addition:	16.1
SiO ₂ (%)	5.2
Al ₂ O ₃ (%)	1.2
Fe ₂ O ₃ (%)	0.6
CaO (%)	49.2
SO ₃ (%)	0.1

Base Cement Phase Composition

C ₃ S	49
C ₂ S	14
C ₃ A	4
C ₄ AF	10

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

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Tom Gepford
Quality Control Manager