



TEXAS LEHIGH CEMENT Co. LP
 P.O. Box 610 Buda, Texas 78610
 Sales (512) 295-6111 Customer Service (800) 252 - 5408

Plant: Buda
 701 Cement Plant Road
 Buda, Texas, 78610
Contact: Victor Gonzalez
Phone: (512) 295-9241

Cement Type: III
Report Date: 03/11/19
Production Period: Star 02/01/19
 Ends 2-28-20169
Tracking No. TLGBU 0000030

**MILL TEST REPORT
 AASHTO ACREDITED**

Chemical analysis % - ASTM C-114

| Item | Spec. Limit | Test Results |
|--|-----------------------|--------------|
| MgO (%) | 6.0 max. | 1.2 |
| SO ₃ (%) | 4.5 max. ^E | 4.5 |
| Loss on Ignition (%) | 3.5 max. | 1.7 |
| Insoluble Residue (%) | 1.5 max. | 0.1 |
| CO ₂ (%) | ^A | 0.00 |
| Limestone (%) | 5.0 max. | 0.0 |
| CaCO ₃ in Limestone (%) | 70 min | 80.7 |
| Total Alkali as Na ₂ O (OPTIONAL) | ^A | 0.78 |
| | Minimum | 0.797 |
| | Maximum | 0.807 |

Physical Test ASTM C-150

| Item | | Spec. Limit | Test Result |
|---|--------------|-------------------------|--------------------|
| Air content of mortar (volume %) | ASTM C-185 | 12 max | 7 |
| Blaine fineness (m ² /kg) | ASTM C-204 | 260 min. | 537 |
| Mesh 325 (45 microns) % through | ASTM C-430 | ^{A - B} | 99.6 |
| Autoclave expansion (%) | ASTM C-151 | 0.80 max. | -0.01 |
| Time of setting - Vicat test (minutes) | | | |
| Initial - Not less than or More than | ASTM C - 191 | 45 - 375 | 80 |
| Compressive strength | | | |
| 1 day, Minimum MPa (psi) | ASTM C-109 | 12 (1740) | 29.4 (4260) |
| 3 day, Minimum MPa (psi) | ASTM C-109 | 24 (3480) | 39.3 (5710) |
| 7 day, Minimum MPa (psi) | ASTM C -109 | ^{A - B} | 44.6 (6470) |
| False Set (OPTIONAL) | ASTM - C451 | 50 min. | 63 |
| Mortar Expansion Bars | ASTM C-1038 | 0.020% Max ^E | A |

Inorganic processing additions & Limestone

| Type | | Slag | Limestone |
|------------------------------------|--------------|------------|------------|
| % Addition | 5% Max | 0.0 | 0.0 |
| SiO ₂ (%) | ^A | 39.88 | 10.47 |
| Al ₂ O ₃ (%) | ^A | 9.37 | 2.86 |
| Fe ₂ O ₃ (%) | ^A | 5.05 | 0.95 |
| CaO (%) | ^A | 28.75 | 46.90 |
| SO ₃ (%) | ^A | 1.81 | 1.86 |

Potential Compounds (%) ^C

| ASTM C - 150 Annex A1 | Finished cement | Base cement |
|--|-------------------------|----------------------------|
| C ₃ S | ^A 57 | C ₃ S 57 |
| C ₂ S | ^A 15 | C ₂ S 15 |
| C ₃ A | 15 max 11 | C ₃ A 11 |
| C ₄ AF | ^A 6 | C ₄ AF 6 |
| C ₃ S + 4.75 x C ₃ A | ^A 109 | ----- |

A Not Applicable
 B Limit not specified by purchaser. Test result provided for information only.
 C Adjusted (ASTM Annex A, point A 1.6)
 D Test Result of prior Month
 E ASTM C-150 Table 1 Note D permits to exceed SO₃ content provided it has been demonstrated to meet what is established under the Test Method ASTM C-1038 at 14 days

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of the current applicable specifications ASTM C150 and AASHTO M85. Cement analysis are reported as oxides, in accordance with ASTM Test Method C114. Silicon dioxide (SiO₂) is present in the combined state as the compounds tricalcium silicate and dicalcium silicate, and not crystalline silica. The above data represents the average of mill samples from the production stream. Inorganic processing additions have been interground in accordance with ASTM C-465. The average composition of this processing addition can be found listed above. We are not responsible for improper use or workmanship.

QC Manager: V Gonzalez-Torres