



Central Plains Cement Company

Cement Mill Test Report

Month of Issue: September 2018

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|----------------------|-------------|
| Plant: | Tulsa, OK |
| Product: | Class C |
| Silos: | 5,A |
| Manufactured: | August 2018 |
| Lot Number: | 1808C |

| CHEMICAL ANALYSIS | | | PHYSICAL ANALYSIS | | |
|--|------------|-------------|--|------------|-------------|
| Item | Spec Limit | Test Result | Item | Spec Limit | Test Result |
| Rapid Method, X-Ray (ASTM C114) | | | | | |
| SiO ₂ (%) | | 20.6 | Blaine Fineness (m ² /kg) (C 204) | 400 min | 459 |
| Al ₂ O ₃ (%) | | 3.7 | | | |
| Fe ₂ O ₃ (%) | | 4.7 | | | |
| CaO (%) | | 62.3 | | | |
| MgO (%) | 6.0 max | 1.9 | Compressive strength (PSI) | | |
| SO ₃ (%) | 3.5 max | 3.0 | 8 hr 100F | 300 min | 700 |
| Loss on ignition (%) | 3.0 max | 1.5 | 24 h 100F | 2000 min | 2010 |
| NaEq (%) | | 0.47 | Thickening Time (minutes) | | |
| Insoluble Residue | 0.75 max | 0.47 | API Schedule 5: mins to 100bc | 90 min | 117 |
| Free Lime | | 1.4 | | | |
| C ₃ S (%) | | 56 | | | |
| C ₃ A (%) | 8 max | 2 | | | |
| C ₄ AF + 2*C ₃ A | | 18 | | | |

We hereby certify that this Class C cement complies with current standard API 10A specifications using applicable API standard or reference test procedures

Certified By:

John Tierney

September 12, 2018

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