FAIRBORN CEMENT COMPANY

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# CEMENT MILL TEST

**Cement Identified as:** **Type IL (10)** **Date: 08/01/22**

**Production Period:** **June, 2022** **Silos: 5**

| STANDARD CHEMICAL REQUIREMENTS (ASTM C114) | SPECIFICATIONS | | ASTM C595 Type IL | | RESULTS |
|---|---|---|---|---|---|
| Sulfur Trioxide (SO3), % [A] | Maximum | | 3.0 | | **3.4** |
| Alkalies (Na2O equivalent), % | | | | | **0.82** |
| Loss on Ignition (LOI), % | Maximum | | 10.0 | | **4.9** |
| CaCO3 in Limestone, % | Minimum | | 70 | | **90** |
| Limestone, % | Maximum | | 7.5 - 12.5 | | **9.2** |
| **PHYSICAL REQUIREMENTS** | | | | | |
| (ASTM C204) Blaine Fineness, $m^2/kg$ | | | | | **461** |
| (ASTM C430) 45-um sieve, % retained | | | | | **1.0** |
| (ASTM C191) Time of Setting (Vicat) | | | | | |
| Initial Set, minutes | Minimum | | 45 | | **132** |
| Final Set, minutes | Maximum | | 420 | | **226** |
| (ASTM C185) Air Content, % | Maximum | | 12 | | **7** |
| (ASTM C151) Autoclave Expansion, % | Min / Max | | -0.20 / 0.80 | | **0.09** |
| (ASTM C1038) Expansion in Water, % | Maximum | | 0.02 | | **0.003** |
| (ASTM C452), Sulfate Resistance, % | | | | | **0.03** |
| (ASTM C187) Normal Consistency, % | | | | | **26.6** |
| (ASTM C188) Density ($g/cm^3$) | | | | | **3.07** |
| Heat of Hydration (ASTM C1702) 3 day, cal/g | Most Recent Value | | | | **79.5** |
| (ASTM C109) Compressive Strength, psi (Mpa) | | | | | |
| 1 Day | | | ------ | | **2885 ( 19.9 )** |
| 3 Day | Minimum | | 1890 ( 13.0 ) | | **4517 ( 31.1 )** |
| 7 Day | Minimum | | 2900 ( 20.0 ) | | **5351 ( 36.9 )** |
| 28 Day | Minimum | | 3620 ( 25.0 ) | | **6489 ( 44.7 )** |

[A] *Per ASTM C595 Table 1 footnote B*

We hereby certify that this cement conforms to all of the standard requirements for portland cement in the above specification for the type specified.

By: Rusty Strader

Physical Testing completed by: DG, JT
Chemical Testing completed by: CA, NC, KL, NM

Rusty Strader
Quality Control Manager
Fairborn Cement Company