



FEDERAL WHITE CEMENT INC.

October 1, 2020

LABORATORY TEST REPORT

Sample Source: **Portland Type I** August Inventory

ASTM C150 STANDARD REQUIREMENTS Tables 1 and 3

| CHEMICAL, % | | | PHYSICAL | | |
|---------------------------------|-----------------------|-------|-------------------------------|-------------|------------|
| Item | Spec. Limit | Value | Item | Spec. Limit | Value |
| SiO ₂ | ^A | 21.52 | Air, vol. % | 12 max | 8.0 |
| Al ₂ O ₃ | ^A | 4.20 | | | |
| Fe ₂ O ₃ | ^A | 0.00 | Fineness | | |
| CaO | ^A | 66.48 | Blaine, m ² /kg | 260 min | 487 |
| MgO | 6.0 max. | 0.98 | % Passing 325 | | 98 |
| SO ₃ | 3.5 max. ^J | 2.82 | | | |
| Ign. Loss | 3.5 max. ^k | 3.05 | Autoclave % | | |
| Na ₂ O | ^A | 0.11 | Expansion | 0.80 max. | 0% |
| K ₂ O | ^A | 0.39 | | | |
| Insol. Res. | 1.50 max. | 0.54 | Vicat Set Time, minutes | | |
| Eq. Alkali % | | 0.37 | Initial Not less than 45 min. | | 107 |
| CO ₂ % | ^A | 0.77 | Not more than 375 min. | | |
| Limestone | 5.0% max. | 1.94 | | | |
| %CaCO ₃ of Limestone | | 90.20 | Compressive Strength | | |
| Potential: | | | | PSI | Mpa |
| C ₃ S | ^A | 68 | 1-day ^A | 2464 | 17.0 |
| C ₂ S | ^A | 10 | 3-day 1740 min | 3975 | 27.4 |
| C ₃ A | ^A | 11 | 7-day 2760 min | 4489 | 31.0 |
| C ₄ AF | ^A | 0 | 28-day ^A | 5876 | 40.5 |

^A Not Applicable

^J When C₃A is more than 8%

^k With limestone addition, otherwise limit 3%

We certify that the above-described cement, at the time of shipment, meets the chemical and physical requirements of the current applicable specification ASTM C150 and current Federal specifications.

We are not responsible for improper use or workmanship