

# ANALYSIS CERTIFICATE

QUALITY CONTROL DEPARTMENT



Cement Type: **White portland Cement**

## CHEMICAL & PHYSICAL PROPERTIES

| CEMENT CHARACTERISTICS                        |             | %           | STANDARD C 150 Type I | UNITS              |
|---|-------------|-------------|-----------------------|--------------------|
| ASTM C114 Magnesium Oxide (MgO)               |             | 0.37        | ≤ 6.0                 | %                  |
| ASTM C114 Equivalent Alkalies                 |             | 0.13        | ≤ 0.6                 | %                  |
| ASTM C114 Sulfur Tri/oxide (SO <sub>3</sub> ) |             | 2.80        | ≤ 3.0 if C3A ≤ 8.0    | %                  |
|   |             |             | ≤ 3.5 if C3A > 8.0    | %                  |
| ASTM C114 Loss on Ignition                    |             | 2.70        | ≤ 3.0                 | %                  |
| ASTM C114 Insoluble Residue                   |             | 0.50        | ≤ 0.75                | %                  |
| ASTM C109 Compressive Strength (Mpa)          | 3 days      | 17.0 - 20.0 | ≥ 12.0 (1740)         | MPa (psi)          |
|   | 7 days      | 25.0 - 50.0 | ≥ 19.0 (2760)         | MPa (psi)          |
|   | 28 days     | 66.0 - 75.0 | ≥ 19.0 (2760)         | MPa (psi)          |
| ASTM C191 Time of setting Min. (Vicat test)   | Initial Set | 155         | ≥ 45                  | min                |
|   | Final Set   | 190         | ≤ 375                 | min                |
| ASTM C204 Fineness                            |             | 4000        | ≥ 2800                | cm <sup>2</sup> /g |
| ASTM C151- Autoclave Expansion (%)            |             | 0.55        | ≤ 0.8                 | %                  |
| ASTM C185- Air Content                        |             | 5.89        | ≤ 12.0                | %                  |
| Whit.(CIE 1931) Y                             |             | ≥ 86.0      |                       | %                  |
| C114 Insoluble Residue                        |             | 0.50        | ≤ 0.75                | %                  |
| Whiteness (Hunter Lab System)                 | L,a,b       | 88.5        |                       |                    |
|   |             | 4.67        |                       |                    |
|   |             | 14.29       |                       |                    |



Approval by:  
LAB. & Q.C.