

# Portland Cement Type II/V (LA)



## CONSISTENCY

**Drake Cement Type II/V (LA) Portland Cement** meets the physical and chemical requirements of ASTM C-150 for Types I, II, and V, low alkali cements, as well as ASTM C-1157 for Types GU, MS, HS cements.

## APPLICATIONS

**Drake Cement Type II/V (LA) Portland Cement** can be used in any general construction application including those with the exposure to moderate or high levels of sulfates in soils and/or water.

## DURABILITY

**Drake Cement Type II/V (LA) Portland Cement** has low level of alkalis reducing the potential for damage due to alkali-silica reactivity (ASR).

## QUALITY

Production and truck samples of **Drake Cement Type II/V (LA) Portland Cement** are tested in our certified cement laboratory. Additional market samples are regularly tested at our concrete laboratory to evaluate field performance.

| Chemical Requirements                                     | Drake Cement Results | ASTM C 150 Specifications Type V | ASTM C 1157 Specification GU |
|---|----------------------|----------------------------------|------------------------------|
| Calcium Oxide (CaO), %                                    | 64.59                | ---                              | ---                          |
| Silicon Dioxide (SiO <sub>2</sub> ), %                    | 21.13                | 20.00 Min                        | ---                          |
| Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ), %       | 4.31                 | 6.00 Max                         | ---                          |
| Ferric Oxide (Fe <sub>2</sub> O <sub>3</sub> ), %         | 4.08                 | 6.00 Max                         | ---                          |
| Magnesium Oxide (MgO), %                                  | 1.27                 | 6.00 Max                         | ---                          |
| Sulfur Trioxide (SO <sub>3</sub> ), %                     | 2.50                 | 2.30 Max*                        | ---                          |
| Loss of Ignition, %                                       | 1.55                 | 3.00 Max                         | ---                          |
| Insoluble Residue, %                                      | 0.45                 | 0.75 Max                         | ---                          |
| Alkalis (%Na <sub>2</sub> O + 0.685% K <sub>2</sub> O), % | 0.54                 | 0.60 Max                         | ---                          |
| Potential Composition                                     |                      |                                  |                              |
| Tricalcium Silicate (C <sub>3</sub> S), %                 | 61                   | ---                              | ---                          |
| Tricalcium Aluminate (C <sub>3</sub> A), %                | 4                    | 5 Max                            | ---                          |
| Dicalcium Silicate (C <sub>2</sub> S), %                  | 14                   | ---                              | ---                          |
| Tetracalcium Aluminoferrite (C <sub>4</sub> AF), %        | 12                   | ---                              | ---                          |
| (C <sub>4</sub> AF + 2 C <sub>3</sub> A)                  | 22                   | 25 Max                           | ---                          |
| Physical Requirements                                     |                      |                                  |                              |
| Fineness, Blaine, cm <sup>2</sup> /gm (C 204)             | 4430                 | 2800 Min                         | ---                          |
| Autoclave Expansion, % (C 151)                            | 0.02                 | 0.80 Max                         | 0.80 Max                     |
| Air Content, % (C 185)                                    | 4.0                  | 12 Max                           | ---                          |
| Compressive Strength, psi (C 109)                         |                      |                                  |                              |
| 1 Day   | 2060                 | ---                              | ---                          |
| 3 Day   | 3550                 | 1160 Min                         | 1890 Min                     |
| 7 Day   | 4470                 | 2180 Min                         | 2900 Min                     |
| 28 Day  | 5440                 | 3050 Min                         | 4060 Min                     |
| Mortar Bar Expansion, % (C 1038)                          | 0.008                | 0.020 Max                        | 0.020 Max                    |
| Time of Setting: Vicat (C 191)                            |                      |                                  |                              |
| Initial Set   | 1:16                 | 0:45 Min                         | 0:45 Min                     |

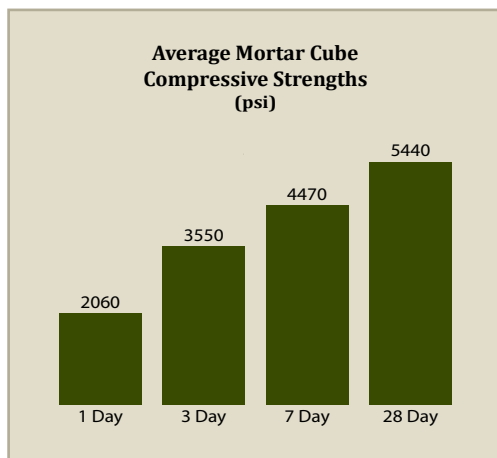
\*Must conform to ASTM C 1038 mortar bar expansion limit of 0.020% if the maximum percent specified for SO<sub>3</sub> is exceeded.

## BUY LOCAL

**Drake Cement Type II/V (LA) Portland Cement** is manufactured at the Drake Plant near Paulden, AZ and is a U.S. made product.

## SUSTAINABILITY

**Drake Cement Type II/V (LA) Portland Cement** is produced at the newest cement plant in the state of Arizona with state-of-the-art technologies and equipment. Several operating and pollution controls incorporated into the plant are so advanced they are found in only a few other facilities throughout the world.



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