Slag Cement

Product Information Sheet

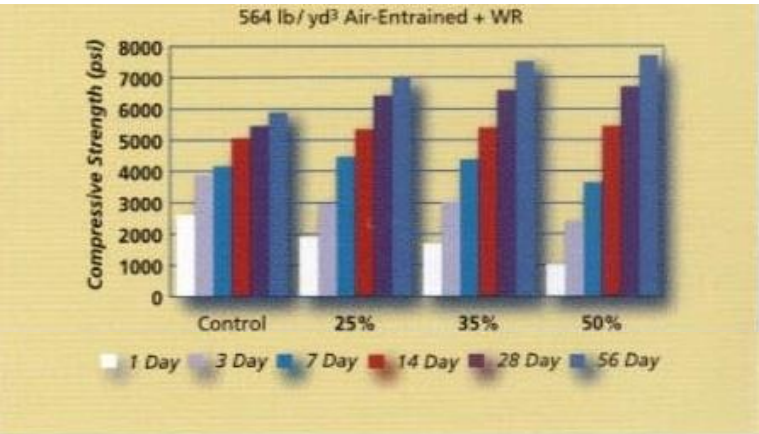
Slag cement is a cementitious material that offers performance and economic benefits unattainable with cement or other pozzolanic materials. In addition to the benefits offered by other cementitious materials, with replacement rates possibly exceeding 50%, slag cement provides a significant reduction in heat of hydration and a whiter, brighter finished appearance. Slag cement is often used in mass concrete such as dams, bridges and retaining walls, residential and commercial concrete, concrete pavements, and high strength and high performance concrete.

Slag cement is a cementitious product produced during the iron manufacturing process. During this process the iron is heated in a blast furnace to a molten state and the slag rises to the top. When slag is separated from the iron and rapidly cooled with water (granulated), the chemistry of the slag morphs giving it cementitious properties. The granulated slag is then ground to a controlled fineness, typically greater than that of Type l Portland cement.

In accordance with ASTM C989, Specification for Slag Cement for Use in Concrete and Mortars, there are three grades based on 7 and 28 day strength results. Grade 80 has a low activity, grade 100 moderate and grade 120 high.

Benefits:

- Effective replacement rates up to and over 50% offering both performance and economic benefits. (Rate of strength gain and set times may be affected at higher rates.)
- Higher 28-day compressive and flexural strengths.



- Reduced heat of hydration in concrete mixes resulting in lower maximum hydration temperatures. Used in high percentages slag cement has been very effective in reducing both the maximum temperature of the concrete and the rate of temperature rise, resulting in a lower temperature differential between the center of the concrete mass and the exterior of the concrete.
- Reduced concrete permeability
- Highly effective in mitigating and reducing potential expansion due to Alkali Silica Reactivity (ASR). This benefit is a result of a number of factors, such as a reduction in the Alkali loading of the concrete mix and reduced concrete permeability.
- Improving the resistance of concrete to sulfates and sulfate attack.
- Increased concrete durability resulting from the previously stated performance benefits.
- Reducing greenhouse gas emissions for concrete made with slag by eliminating approximately one ton of carbon dioxide for each ton of Portland cement replaced.
- Whiter, brighter finished surfaces increasing safety and reducing the amount necessary artificial lighting. The lighter color also reflects more insolation, reducing the "urban heat island" effect on structures and pavements exposed to the sun, resulting in cooler structures and pavements.
- Consistent air entrainment performance
- Improved finishability
- Improved pumpability

For further information please contact one of the following

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