



VCAS™ White Pozzolans

**Custom-engineered, high performance, pozzolanic mineral additives
for use in white cement, mortar, and concrete products**

www.vitrominerals.com

Mixing Guide

VCAS™ pozzolans may be used to replace a portion of the Portland cement used in your mix design. By themselves, VCAS™ pozzolans are not cementitious. However, when incorporated in concrete mixtures, VCAS™ pozzolans react with the calcium hydroxide produced during the hydration of the cement to form additional cementitious compounds that will make your concrete 20% stronger, more durable, less porous, and also greatly reduce efflorescence. Detailed technical data on VCAS™ pozzolans can be found on our website: www.vitrominerals.com

VCAS pozzolans have a 17.5% lower specific gravity than Portland cement (3.15 vs 2.6). Therefore, to achieve equal volumes, the customer need only add back 82.5 lbs of VCAS for every 100 lbs cement removed from the mix to make the same paste volume.

There are several ways to mix VCAS:

- (1) Replacing Cement: For every pound of cement removed from the mix, add back 0.825 lbs of VCAS to achieve equal volumes. All other ingredients stay the same.
- (2) Add VCAS to Existing Mixes: Add 25 lbs of VCAS for every 94 lb bag of cement. This increases the volume of the cement paste (cement + pozzolan) by 32%. Increase sand by 30% and water/admixtures by 25%.

The resulting mixture will be more creamy and trowel more smoothly. It will also generally be possible to reduce the dosage of chemical admixtures in the mix when VCAS™ pozzolans are used. This is best done with trial batches where the admixture dosage is reduced stepwise until the desired workability, or other property, is achieved.

The exact amount of cement to be replaced by VCAS™ pozzolans is quite forgiving, as cement replacements can be between 15% and 30% without negative consequences.

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