

Kel-Crete Industries, Inc.

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Suggested Mix Design Options

To begin with please keep in mind that Kel-Crete Premium Super Dry Admixture is formulated to meet all ASTM requirements. When used with Portland cement **no other admixtures are required** in the production of plaster/stucco, masonry, shotcrete and concrete mix designs. The following options are designed to address the greatest number of variables and climatic conditions in the manufacturers' market areas of sales and use. An example: a plaster/stucco contractor who hand applies his applications may state, "**The mix design works very well, but it feels sandy.**" **Kel-Crete at one ounce per 94-pounds of Portland cement will replace 25 pounds of hydrated lime as a plasticizer** but will not replace the **feel** of the hydrated lime. In this case a manufacturer may choose to keep 1 to 2 pounds of hydrated lime in the mix **only for the feel**.

There are a variety of sand conditions in every state such as being **sharp or round**. In most cases sharp sand comes from **manufactured sands** and are harder to pump. With their use a very **small addition** of Kel-Crete may be required per the 94 pounds of cement.

If a manufacturer is producing a **pre-blended masonry product** he may choose to keep 2-3% hydrated lime in his mix design so as to comply with ASTM and Uniform Building Codes. This is okay because Kel-Crete will neutralize the percentage of lime so as to obtain complete hydration of the masonry mortar and still retain the high percentage of the **water retention**.

A manufacturer should always be concerned with the quality of Portland cement being used in his product as there have been reported issues with the quality of **imported cements**. By definition **fly ash** is considered an **aggregate** however, with the Portland Cement Association's blessing fly ash has been considered a **replacement to Portland cement** in certain percentages because fly ash has a cementitious composition in it. This came about at one time due to a shortage of Portland cement. As most manufacturers know that shortage is in the past, and today the cost of fly ash is almost equal to Portland cement.

The use of fly ash does have some benefits in a mix design in that it will provide some workability and easier pumping however it is our suggested recommendation that fly ash should be limited to **no more than 6% in plaster, stucco, or masonry cement products**. Manufacturers should also be concerned with the very high toxic chemical content in fly ash. The high range of **water reducer** in Kel-Crete will help offset the demand for water required with its use.

Should the manufacturer **include sand** in the finished pre-blended plaster, stucco or masonry products he should always blend the Kel-Crete into the Portland cement **prior to blending the sand** into the mix design. A manufacturer should also take into account the EPA Leeds and carbon footprinting requirements in producing their products. Kel-Crete Premium Super Dry Admixture meets both of these EPA standards.

Because such a small amount of Kel-Crete is required to meet the performance requirements a manufacturer may find that **additional blending time** is required depending on the type of blending equipment. Should the blending equipment be used to blend a number of products the equipment should be cleaned in between blends so contamination will not occur. And a mix design for masonry may not be helpful for a plaster/stucco mix design and vice versa.

These mix design options are our suggested in-house options only and do not reflect any proprietary mix designs of our clients. We hope they are helpful for present and future clients. It is important to note that the best possible mix design can be affected by misuse of the product on the job site. It is for this reason a contractor should be educated in proper mixing and application of the product. See my "Sales Education" article on our web site at "[www:Kel-Crete.com](http://www.Kel-Crete.com)".

Who you know is important however, what you know is equally important in the mortar industries.

Chuck Green,
President