
A New Portland Cement Based Product

High Strength, Low Shrinkage Plaster Cement

A new Portland cement based product has been introduced by Kaiser Cement Corporation and Gibco, Kaiser Premium Plastering Cement. Developed to fill the plastering industry's need for a high strength, low shrinkage, easily pumpable plastering cement. When properly proportioned, Kaiser Premium Plastering Cement provides improved workability, increased pumpability, ease of troweling, adhesiveness to bases, resistance to sagging and fallouts, and less permeability than conventional plastic cements. In addition, because all of the necessary admixtures have been incorporated into the cement before it is packaged, this product provides for much greater batch-to-batch uniformity and decreases the possibility of occasional errors in addition rates which occur when these materials are added at the mixer.

Kaiser Premium Plastering Cement is composed of more than 98% Type I-II, low alkali Portland cement which meets all chemical and physical requirements of ASTM C-150 and Federal Specification SSC-1960/3. The admixtures contained in this product conform with the requirements of ASTM C-494 for Type A and Type F

admixtures, as well as the requirements of ASTM C-260 for air-entraining agents. These admixtures are proportioned for use in plaster and stucco and have been issued ICBO research card number 3213 under the trade name Gibco PRF (manufactured by Gibco Industries, Inc., Tulsa, Oklahoma).



The Stauffer Hotel in Palm Springs uses Kaiser Premier Plastering Cement. Pierce Enterprises was the plastering subcontractor.

Kaiser Premium Plastering Cement contains no mineral plasticizing additives. Instead, non-mineral water-reducing, air-entraining, and plasticizing additives are used. These are carefully blended to provide increased body for spreadability, increased pumpability, and increased plasticity. At the same time, the water reducing action of the additives reduces the amount of mixing water needed in order to achieve a workable consistency.

The elimination of all mineral additives allows Kaiser Premium Plastering Cement to develop more strength faster and with less drying shrinkage. Further, because there are no mineral additives, certain code-approved additives may be added at the jobsite if the contractor feels that they are necessary, as in the case of

some poor quality sands. With conventional plastic cements, the addition of any diluents is expressly forbidden. Many contractors feel, however, that Kaiser Premium Plastering Cement alone develops more than sufficient plasticity and body for pumping and material suspension to prevent sand packs.

Application

Whether the material is applied by gun or hand, the air entraining and plasticizing

agents it contains serve to ease pumping and spreading, as well as reduce water demand as compared with conventional plastic cements. In fact, it is critical that the contractor using this cement for the first time be aware of its reduced water requirements. Adjustments can then be made as needed to avoid over-wet mixes.

Once the plaster or stucco is actually "on the wall," the air entrainment and plasticizing agents allow more



Air entraining and plasticizing ease application and reduce shrinkage.



time to rod and float the brown coat due to the cement's superior water retention properties. In addition, the micron-sized entrained air bubbles block capillaries in the material to slow the bleed rate and thus reduce the tendency for the material to "dry out" prior to completing the hydration process. This helps eliminate any delamination between coats which is occasionally seen, as well as "soft walls" which are often associated with "dry outs."

Properties of Hardened Plaster/Stucco

All Portland cement-based products shrink as they dry. Further, the inclusion of most mineral admixtures (clay, lime, etc.) in plastic cements increases the cement's drying shrinkage potential. This drying shrinkage leads to cracking when the tensile stresses in the plaster exceed its tensile strength, especially at planes of weakness.

Kaiser Premium Plastering Cement uses no mineral additives, but does contain water-reducing super-plasticizing and air-entraining admixtures. Less mixing water needed results in higher strengths and less drying shrinkage. Thus the plaster will produce a harder, less permeable (to moisture) wall that is less likely to crack than one which is made with conventional plastic cement.