

TECHNICAL BULLETIN

Cement Finishes Color Variation Causes

Applied properly, Portland cement stucco can produce a beautiful, long-lasting color finish. Different degrees of color variation can be achieved by employing certain application and substrate preparation techniques. Just as with any scientific evaluation approach, the causes and effect theory applies. Among the many factors that influence color in Hard-coat stucco finish applications are the following.

Substrate density:

if the substrate density varies, the color coat finish will vary in intensity.

Substrate composition:

the same color coat applied to different substrates will vary, due to different absorption characteristics. (e.g. pre-existing stucco and new brown coat.)

Color coat hydration:

(i.e. weather) the color coat uses available moisture to cure. The same stucco may take on a different color in a very humid environment than in a dry area.

Application technique:

the applicator can influence the final color of the stucco assemble through application method, choice of tools, etc. For instance, **water used to float or trowel the finished surface will change the color making it cloudy or mottled** or an applicator can burnish the color of a smooth finish using a steel trowel to create an "old world" look.

Mixing procedures:

the mixing of stucco, water, and color packs needs to be according to manufacturers' guidelines to ensure consistent finished product. For instance, mixing time and stucco-water ratio can affect stucco color. Also, to ensure good workability and color consistency, the re-tempering of the material after 10 minutes set time is recommended.

Stucco texture:

the same stucco takes on a different appearance when used in a smooth finish, a sand finish and a lace textured finish (skip troweled), for instance. This is partly because of the shadows created and the influence of the aggregate in the product.

Recommended Color Quality Assurance Procedures:

A small amount of preparation before application of the stucco color coat can help ensure that the stucco finish meets expectations. It is recommended that a mock-up be made on the job site to closely simulate actual application results before going into production. This is because small lab samples will not fully represent the appearance of the final product. A jobsite mock-up will give all interested parties an idea of how the finished product will look, taking into account as many of the abovementioned color factors as possible (such as weather, substrate, and application technique).

In this way, any surprises can be limited in scope, and adjustments can be made before they become too costly. Keep in mind that, over time, mock-ups may change color. For best color consistency, factory blended stucco finishes are recommended.

When matching new stucco to an existing building or stucco sample, it is recommended that a physical sample of the material being matched be examined by the stucco manufacturer's lab. Due to changing natural raw materials, it is advisable to check the existing material against current colors, and make any necessary adjustments before doing the job

ASTM C-926 section X1.1.4.1

States: The uniformity of color cannot be guaranteed by the materials manufacturer of the component materials or by the application contractor. Color uniformity is affected by the uniformity of proportioning, thoroughness of mixing, cleanliness of equipment, application technique, curing conditions and procedure, which are generally under the control of the applicator. Color uniformity is affected to an even greater degree by variations in thickness and differences in the suction of the base coat from one area or location to another, the type of finish selected the migration of color pigments with moisture, and with job site climatic and environmental conditions. These factors are rarely under the control of the applicator.

7.4.2 The use of excessive water during the application and finishing of finish-coat plaster shall be avoided.

X1.3.1 Staining of Plaster—Staining and discoloration of plaster, caused by free water draining from one plane of plaster to another or from a dissimilar material onto a plaster surface, can be minimized by providing sufficient depth and angle for drip caps and the use of water-resistive surface coatings.

X1.3.2 Staining of plaster due to entrapment of moisture behind the plaster can be avoided or minimized by providing an air space for ventilation between the back of the plaster and adjacent material. This type of staining may occur where insulation with or without vapor barrier, or other material containing asphaltic or coal tar derivatives, fireproofing salts, and so forth, can migrate with moisture movement to the finished plaster surface.

X1.3.3 Integrally colored plaster can be discolored or altered in shade if subjected to moisture, from external sources, such as rain, too soon after applications.

PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at usa.sika.com.

LIMITED WARRANTY NOTICE

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling our Technical Service Department at +1 (800) 226-2424

Nothing contained in any SIK A literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIK A product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIK A product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs.

NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR