

White & Colored Mortar Materials

To assure consistent color on a project, the variables that determine mortar color (materials preparation, installation, and cleaning) must be controlled.

Initial selection of mortar color may be made on the basis of color charts or mortar samples that are typically available from manufacturers of white and colored cements and pigments. However, final selection of mortar should be determined on the basis of evaluation of a sample panel or mock-up constructed using the units, mortar materials, water amount, mixing procedures, workmanship, tooling technique, and cleaning procedure that is proposed for use in the final project. The purchaser (owner) and provider (mason) should review the sample panel together and establish a clear understanding of expectations of masonry and mortar appearance. The sample panel should be retained for reference until the masonry is completed and accepted by the owner.

Refer to TCC Materials® Technical Notes on *Evaluating Colored Masonry Mortars* and *Use of Colored Masonry Mortars*.

White Mortars

Always use clean, potable water in mixing. White mortar is made with white portland cement, lime, and silica sand. White cements for masonry should meet the same ASTM specifications as their grey counterparts. Portland cement should meet the requirements of ASTM C 150 for Type I portland cement,

although Type II or Type III cements are sometimes used in mortar. Silica sand should meet all appropriate ASTM specifications.

Silica sand is a natural mined product that varies in shade and color. The raw material supplier makes no warranty as to color and there is no color specification for silica sand. Further, there may be color/shade variations from one load of silica sand to the next. A job site mock-up is an industry acceptable method for comparing color and texture when using white mortar, but due to the inconsistency of silica sand raw material, it is impossible to assure color/shade match from bag to bag.

As with grey or colored mortar, white mortar should meet the requirements of ASTM C 270 for the type (N, S, or M) designated. Buff or brown sands will impart an undertone of color to the mortar. This sand color may become more pronounced over time as sand particles are exposed on the surface of the mortar joint due to the erosion of the white mortar paste. Also, when cleaning white mortar be sure not to remove white paste.

Colored Mortars

Mortar color is so sensitive to pigment content that proportioning is best accomplished by using factory preblended Spec Mix® mortar.

Integrally colored mortar may be obtained through the use of pigments. The color of the mortar joints will depend not only on the pigment, but also on the



cementitious materials, sand, water-cement ratio, and tooling. Always use clean, potable water in mixing.

Re-temper white or colored mortar cautiously to avoid color changes. Water content and stiffness of mortar during tooling affect color. Different joint finishes can be selected to provide a desired appearance in the completed masonry. Concave or V-Joints are preferred for optimum weather resistance. Excessive or lack of joint finishing will affect color.

Special care must be taken with white or very light-colored mortars to assure that joint surfaces are not discolored with metallic deposits from the jointer. The mason should use ceramic, stainless steel, or plastic jointers when working with such mortars.

Other factors to consider:

- Submit color chart or sample chip set for color selection.
- Submittals are for general indication of color and may vary somewhat from mortar finished in the field.

- Maintain consistent water to cement ratio for mortar throughout project.
- Do not re-temper or add additional water to colored mortar.
- Tool all mortar joints at the same degree of hardness and moisture.
- At location on project selected by specifier, demonstrate each condition required on project using materials, workmanship, joint retreatment, and cleaning techniques to be used throughout project.
- Provide full-scale mock-up panel and construct at least one month before start of other CMU or brick work to allow mortar to cure before observation.
- Approved mock-up panel will establish minimum standard for workmanship.
- Approved mock-up panel shall not be demolished or removed from site until work has been completed and approved. Mock-up panel may remain as part of work.

Cleaning Colored Mortar Walls

Refer to TCC Materials® Technical Note *Washing of Masonry Walls*. Washing a wall while mortar is still fresh can smear pigment and cement across face of masonry units and make cleaning more difficult.

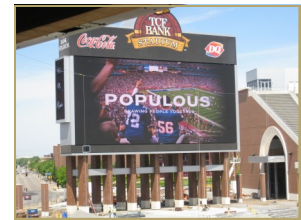
When it comes to cleaning masonry, less is better. Careful workmanship includes

implementing skills that minimize mortar dropping and smears on the face of the masonry. Covering the tops of walls at the end of each working day will prevent rain from entering walls and help reduce the possibility of efflorescence.

- Use least aggressive cleaning techniques possible. Pre-qualify the procedure on the sample panel and a small test area of the building. Verify cleaning procedure is consistent with recommendations of masonry unit supplier and pigment manufacturer.
- After cleaning a trial area, allow the area to dry, and closely examine mortar joint surfaces to ascertain that the procedure has not etched the surface.
- For light colored mortar and masonry units (white, beige, cream, yellow, buff), it may be advisable to use a less aggressive cleaning product .
- Prior to further cleaning, allow masonry to continue curing for at least three weeks in summer or four weeks in winter.
- If proprietary cleaning agents are used, test cleaning agent on a small, inconspicuous wall area and check effects prior to proceeding. Follow directions from cleaning manufacturer. In most cases, it is advisable to pre-wet wall area prior to applying cleaning product. Begin cleaning at the top and work

down. Thoroughly rinse walls afterwards with clean water.

- It is not recommended to use muriatic (hydrochloric) acid on colored CMUs or mortar. When acid based cleaning solutions are used, the mortar should be allowed to cure at moderate temperatures for about a week prior to cleaning.



Warranty

Seller warrants that its product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, express or implied, including, but not limited to, those including merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that, seller's liability to the buyer at no point for any particular project shall exceed the total purchase price of said product.

Limitations

Spec Mix® Preblended Mortar should be installed in accordance with the provisions of the local building code and applicable ASTM Standards. Good workmanship coupled with proper detailing and design assures durable, watertight construction.