



301 Pleasant Drive \* Dallas, Texas 75217 \* 214-398-0999 \* FAX: 214-398-1293

## ACCEPTANCE STANDARDS

The inspection & acceptance of stone should be performed at time of delivery & later, after all pieces have been installed, pointed & cleaned. The final inspection should be performed prior to the application of water repellents or sealants. The installer should be familiar with the project specifications, as well as the applicable industry standards. Test reports of compressive strength, absorption & other material properties should be on file along with the approved sample.

Prior to installation, confirm that the color and texture of the approved sample match the delivered product. Our stone should approximate the color & texture of the approved sample when viewed under good lighting conditions at a 10-foot distance & should show no obvious imperfections from a 20-foot distance, other than minimal color & texture variations. In addition to concerns about color & texture, the installer should be familiar with the dimensional requirements of the project as they pertain to joint size & interfaces with adjoining materials.

Stone should always be appraised for color when dry, as dampness will darken the surface color & it will appear blotchy. Differences in curing time will effect the color since moisture will stay in the units for as long as 6 months; even in dry weather. Stone which has been indoors for a long period of time will look considerably different than stone which was made only a short time before.

The texture of stone should be approximately equal to the approved sample when viewed from a 10-foot distance in good lighting. Don't appraise the texture or color when sunlight is skimming across the surface as this will accentuate minor irregularities.

Minor differences in color & texture from stone to stone should be within the limits of the accepted range, established by range samples, mockups or by deviations from instrumentally measured color coordinates. Expect color variation to be approximately equal to a good, natural cut limestone project.

Colors which contain large amounts of integral pigments, such as reds, greens & dark browns, will vary more than neutral shades, such as white or tan.

Color variations within the same stone may be the result of efflorescence, or free lime migrating, to the surface. This can usually be fixed by a proper washdown. Stains, mortar smears or improper washing can also create color variations within the stone & the manufacturer should be consulted.

Patching is perhaps the greatest source of dissatisfaction with stone projects. After months have gone by between the date of manufacture & the date of repairs, significant differences in color can exist between properly patched areas & the remainder of the stone. These patches should be left alone & will blend in over time through curing, weathering & sunlight. It is incorrect to require an instant color match at the time of repair, since this will usually cause darker patches over a period of time.

Some common non-acceptable deficiencies in high quality stone installations may include:

- Bug holes or air voids on the exposed surface.
- Ragged or chipped, unpatched edges.
- Stains on exposed faces.
- Twist, warp, out of square or bow, exceeding ASTM C1364 tolerances.
- Out of plane or irregular joints; or joints out of tolerance.
- Areas of rough texture not matching the approved sample from a 10- foot distance.
- Visible cracks exceeding 0.005".
- Reinforcing shadows on exposed surfaces.
- Rust on exposed surfaces caused by staining, reinforcement or iron pyrites.
- Installation does not match joint layout on approved assembly drawings.
- Form marks or depressions in excess of 0.030".

Owners & their representatives will often apply some wishful thinking when viewing & touching a small 6-inch or 12-inch sample & then try to imagine the way an entire building will look when finished. Whenever feasible, an investment should be made in mock-up panels and/or sample units.



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### **PATCHING STANDARDS**

The best way to avoid chipped or damaged stone is careful handling & protection of the units before & after installation. No matter how much care & planning is used, some stone still gets chipped from time to time & patching is to be expected.

A chip that is obvious from a 20-foot distance should be repaired. Chips that measure 1/4" or less should not be repaired & are usually left alone. Stones with chips bigger than 8" x 8" should be remade, unless the broken piece can be saved & adhered to the unit.

The weather must be considered before patching is started. Never repair stone in freezing weather or if a freeze is expected within 24 hours. Patching should be done during the morning hours on hot days, or where the stone is shaded, or the temperature less than 90 degrees.

The same material that was used to make the stone should be used for patching. Experimental batches should not be used to obtain an instant color match. A properly made patch will not match right away. Dry cast stone products should look lighter where repaired. Patches that match within a week have a tendency to change their color after weathering. After additional curing, weathering and sunlight, the patched area will eventually blend to the original stone color. This could take 3 months to a year or longer, depending on the weather conditions & exposure to the sunlight.

Patched areas that cannot be seen from a 20-foot distance when viewed in good lighting should be accepted.

For further technical information, please see our Patching Instructions.



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## PATCHING INSTRUCTIONS

### WHEN TO PATCH:

- Damage that can be easily seen from 20 feet away should be patched. Corner chips that are ¼" or less in width do not normally require patching.
- The air and stone temperature should be above 40°F during, and 24 hours after patching. Patch during the morning hours on hot days and avoid patching when the temperature is above 90 degrees.

### TOOLS/MATERIALS:

1. Patching material- The best method is to grind up some leftover stone from the same jobsite, especially for small chips or cracks. We can supply you with matching sand if this is not feasible.
2. White acrylic liquid bonding agent.
3. Mixing containers.
4. Water.
5. 2 spray bottles.
6. Wooden or plastic wedges or trowels.
7. Sponge.
8. Damp rag.

### PROCEDURE:

1. Test patch a piece of leftover stone and get approval before continuing on the rest of the job.
2. Mix a small amount of patching material with only enough water to make a zero slump mix.
3. Add a small amount (approx. 1 tablespoon) of the bonding agent. Do not use as a substitute for water. This mix should be as dry as possible. It should have just enough water so it can be compacted in your hand like a dirt clod. Mix for 4 or 5 minutes.
4. At this point, the color of the patch mix should be close to the color of the stone when wet.
5. Drench the patch area and surrounding stone surfaces with water in a spray bottle.
6. Spray some bonding agent on the patch area and let stand for 5 minutes.
7. Press the patching material into the damaged area with a wooden tool or trowel. For large holes, compress the patch material onto the wooden tool before applying. When the patching material is over 20 minutes old, replace with fresh mix.
8. Smooth the patch with a wooden tool. Use the least amount of strokes as possible. Too much tooling will create a slick surface. Leave a little extra material on the patch.
9. After initial set, burnish the patch with a sponge, sandpaper, piece of carpet or anything that will create a sugarcube finish. Some trial and error may be required.
10. Cover the patch with a damp cloth or piece of plastic for 24 hours.
11. Wait 5 days and wash down with a masonry stone cleaner.
12. A good patch will not match in color right away and will usually appear lighter. Over the next 3 to 12 months, depending on the climate, curing, weathering and ultraviolet bleaching will blend the color of the patch into the surrounding area.