

# Cast Stone Commercial Services

Stone Legends • 301 Pleasant Drive • Dallas, Texas • (800) 398-1199 • Fax (214) 398-1293

## Patching Instructions

### WHEN TO PATCH:

- Damage that can be easily seen from 20' away should be patched. Corner chips that are 1/4" or less in width do not normally require patching.
- The air and stone temperature should be above 40 degrees 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 an thing that will create a sugar cube like 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 usual!) 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.

## Advanced Patching for Cast Stone

Patching and touchups should be done after the installation is complete, but before the stone is sealed.

**Materials** - Use a grout purchased locally, a bag mix of grout with polymer additives blended in. If you must choose a color that is not an exact match then go to a lighter color when purchasing grout. Most masonry or tile suppliers have pre-bagged grout that comes in a variety of colors.

**Preparation** - Wet the stone area to increase capillary action. Use a cement bonding agent to prepare patch area. It must be clear or white “not blue” and apply it with a small artists brush only where it will not be exposed after the patch is complete. Tape off the area and with a razor remove the tape leaving only the patch exposed. This help protect the stone from additional stains caused by getting the patch material into the pores of the stone.

**Colors** - You can also use the acrylic paint/stain to adjust the mix as well. (Caution: use only acrylic paints in the mix. Oil based paints can be applied after the patch is dry.) Then you can fine tune the color as necessary with the use of acrylic paints thinned down to a stain, (use a color somewhat similar to the stone). You can use the paint to help tint the stone by adding it to the patch mix as well.

To make a patch with textured stone you will need to faux stain the patch after it dries fully, matching any pattern in the adjacent stone surface. Send a sample stone for each color to the paint store and match at least two hues of each color in that stone. Darkest and lightest hues are to simulate the modeling of the stone surface when blotting the stain on. This will give you some control over your supplies and also give your crew a quick and consistent process by which to train to that will leave you with a favorable result. The skills you have in your crew, as well as the time you can afford to spend before you pull off.

**Advanced Technique** skills are required in the following procedure. The viscosity of the mix and babysitting it takes. We furnish the base color sand, you get a minerals or use acrylic paint to color to hue of the mix, which is even more like being an artist at times. Mix with white Portland and a healthy measure of polymer.

Some patches that are closely examined may need to have the base sand ground finer so that when it is honed later the granules will not pull out before they are polished by a white wet stone fine grade.

**Preparation** - Wet the stone area to increase capillary action. Use cement bonding to prep patch area it must be clear or white “not blue” and apply it with a small artists brush only where it will not be exposed after the patch is complete. Tape off the area and with a razor remove the tape leaving only the patch exposed. This help protect the stone from additional stains caused by getting the patch material into the pores of the stone. Note: Tape is not required if the viscosity is stiff.

Prep the patch with polymer just before applying the patch it helps adhesion, Be careful to keep it off the face stone then set the patch.

It is a good idea to avoid too wet of a mix but it does lower the skills required. If you elect to make more of a paste then use the tape mentioned above especially at first so you do not get the now whiter Portland because of the added water into the pores of the undamaged stone. The dryer you can work it the easier this is to avoid. Sometimes the patch requires a wetter mix, if so it is advised you tape off the area and cut tape away leaving only the patch exposed. This allows a wetter mix and a little less skill.

Tooling it as it kicks with stainless steel will get you close to a good finish. (If tended at starting with a very stiff viscosity then DO THIS WITH “stainless steel tools” to prevent staining caused by the burnishing.)

With this method you can sculpt it at intervals of curing but it takes experience and some knowledge of the correct pressure and force lines as you tool the patch.

Also a white fine stone to grind the now dry patch if the moisture content gets too high. It will flash and require dressing and a little acid wash to blend it.

We have found the sand to be too coarse for patching so we usually grind it into smaller particles before mixing so when we take a wet stone and hone it later (WITH A WHITE WET STONE) it does not pull large grains of quartz out. This allows you to get a very high level repair if the view distance is very close. This method takes finesse and practice. This still would require some staining after the patching with the acrylic stains, which are less sensitive to moisture. Oil stains are effective as well and have less of a glazed effect by penetrating the stone.

The 5 minute epoxy is a mix of sand and epoxy. To tent the sand either use minerals or pre-stain sand with acrylic allowing it to dry before mixing with epoxy.

Once again it is a good idea to grind the stone to about the half size aggregate not a powder but smaller grains it makes the tooling easier. Mix sand into the mix to thicken it. The patch should be sand mostly bonded together with the epoxy.

This is useful in patches especially where there is a viewing distance of over 15 to 20 feet.

It has a very short working life which speeds the patching process.

Tape off the patch, make sure the stone is dry and apply the mix & building it up as the epoxy stiffens.

Again stainless steel tools and it helps to wet the tool to prevent the epoxy from dragging and sticking to the SS trowel. Some yellowing occurs and it is necessary to faux paint the patch when complete to blend it into the stone.