

Creating Stained Glass Garden Benches with

DiamondCRETE™
www.diamondcrete.net Inc.

*The following instructions are very similar to those used in creating stained glass stepping stones with a few important considerations given for the large nature of the Garden Bench project. Completing your first stained glass stepping stone allows a much greater understanding of the unique challenges in this project.

Supplies needed:

Pens or pencil	Mold release agent (optional)
Pattern x 2 - original & copy (see first step)	Glue stick or Tacky Wax
Scissors	100 lbs. DiamondCRETE™
Glass in selected colors	Dust masks for all
Glass marking pens	4 mixing buckets – 5 gallon size
Glass cutter, groziers, & running pliers	Measuring cups – 1 dry and 3 liquid
Grinder (optional)	Gloves for all
Safety Glasses	2 friends (or 1 very strong one!)
Glass cleaner & paper towels	Power drill with mixing paddle
Mosaic Mount™	Rubber Mallet
Razor blade or craft knife	Blanket or other thick padding
Mold	DiamondSEAL™

Prepare Pattern:

- A. Review the pattern you've selected and be certain the lines separating each piece are at least 1/4" wide. If they are not, take a moment and trace over the pattern lines with a thick black marker.
- B. Using a pen or pencil 1) number the pieces, 2) note color selection for each piece, 3) mark each pattern piece for 'directional' placement on your glass. Be sure all pattern lines have been checked and notes are made before making your pattern copy.
- C. Cut out all pattern pieces from the copy by 'removing' the lines from the pattern. This is best accomplished with scissors instead of pattern shears as pattern shears do not leave the required 1/4" space between pieces to allow the DiamondCRETE™ to properly flow around each piece of glass.

Cut Glass:

- A. Arrange each pattern piece on selected glass paying attention to the 'swirl' or pattern in the glass. Using glass marking pens, trace and number each piece onto the glass leaving enough room to separate each piece before cutting.
- B. Wearing safety glasses, use the glass cutter, groziers, and running pliers to cut out each piece of the pattern. For proper fit, be sure and cut on the inside of the traced lines.
- C. As needed, use the grinder to remove especially sharp points or flares. Best results are achieved when the top surface of the glass does not come in contact with the

grinder. Remember that any flares or chips below the top surface of the glass will be buried in DiamondCRETE™ and will not be visible.

Assemble Project:

- A. After cleaning your work area, carefully clean each piece of glass and arrange them, evenly spaced, over the original pattern. When working with a pattern as large as a bench, you may find it helpful to use a tiny amount of Tacky Wax on the back side of individual pieces of glass to avoid accidental shifting in one section while you are focused on another. You will need to remove any excess Tacky Wax before you pour your bench so use only what is needed to keep your work in place until you can get the Mosaic Mount™ properly attached to the top surface of the glass (see next step.)
- B. Using Mosaic Mount™ cut slightly larger than the pattern, separate the mount from its backing and apply the sticky side of the mount evenly over the top surface of the glass pieces. When applying Mosaic Mount™ the size of a bench, you will need to take some time and a few extra precautions that are unnecessary when creating smaller stepping stones. You will notice that removing the backing from such a large piece of mount without the film accidentally sticking to itself is challenging. To make this step easier, have a friend hold one end of the film (or anchor it in some way) while you pull the backing away. To apply the film to the glass, start at one side of the pattern and gently lay the film over the glass moving toward the other side. Press each piece of glass to be sure the adhesive film has made contact.
- C. Flip project over. Using a razor blade or craft knife, trim Mosaic Mount™ around the outside borders of the project design.
- D. Prepare the mold by spraying the vertical inside surfaces with mold release or applying a thin film of petroleum jelly. Coating the bottom of the mold with a mold release agent is usually unnecessary especially in a piece as large as a garden bench where the weight of the piece will do more to remove it from the mold than the release agent. Place mold on a level surface.
- E. Place project in the mold with the Mosaic Mount™ on the bottom surface of the mold. To keep your pattern from shifting in the mold during the pouring operation, you may wish to use a glue stick or small amounts of Tacky Wax applied minimally between the Mosaic Mount™ and the mold. Be careful that no glue from the glue stick or Tacky Wax comes in contact with the mold where there is no Mosaic Mount™ and clean up any accidental smears or smudges. If the clean up is not thorough, the glue or wax will react with the water in the DiamondCRETE mixture and will streak your finished piece.
- F. Everyone involved in mixing and measuring should be equipped with dust masks and mixing gloves. In separate containers, measure DiamondCRETE and water sufficient for the project. Since you will need approximately 100lbs of dry DiamondCRETE™ and 24 cups of water (or less), we recommend you divide it into 3 batches of approx 33lbs DiamondCRETE™ and 8 cups water per batch. To divide the DiamondCRETE™, try purchasing three 25lb boxes and three 10lb boxes. Once opened, remove 3 cups of dry DiamondCRETE™ from each of the 25lb boxes and

reserve those 9 cups for grouting (or another project) in a separate container. No matter how you purchase or measure your DiamondCRETE™, be sure and reserve a few cups for grouting after the bench is removed from the mold. To divide the water, pour 6 cups of water in each of 3 mixing buckets and reserve the remaining 2 cups of water per batch in each of the 3 liquid measuring cups. When the measuring is done, each batch will have 33lbs DiamondCRETE™, 6 cups water in a mixing bucket, and 2 cups water reserved in a liquid measuring cup. The 4th bucket should be about 1/3 full of water and will be used to clean the mixing paddle while the bench is being poured.

- G. For the bench project, you'll need some help pouring 100lbs of DiamondCRETE™. Start with the 1st of your 3 buckets, place the mixing paddle in the bucket, and carefully add the pre-measured 33lbs of DiamondCRETE™ to the 6 cups of water. Start slowly to avoid splashing and move the drill and mixing paddle around in the bucket as needed to homogenize the mixture. You may need to add some water during the mixing, but you should not need to add all the reserved water. Add only enough water to bring the slurry to a thick milkshake consistency. Exact amounts of water used will vary by humidity and color of DiamondCRETE™ selected. Once the 1st bucket is at the correct consistency, pass it to one of the two friends and instruct them to continuously stir the mixture with their gloved hands until you're ready to pour. Be sure they reach into the bottom corners of the bucket where the mixing paddle may not have been able to reach. Repeat the above procedure for the remaining 2 buckets handing the 2nd bucket to the next friend and finishing the 3rd bucket yourself. Before you check the consistency of the 3rd bucket, stir and stand your mixing paddle in the 4th bucket of water making clean up a breeze a little later on. When all 3 buckets are the same consistency, you're ready to pour. Simultaneously, have each friend pour their bucket slowly over the glass in the bottom of the mold. From the time the water comes in contact with the DiamondCRETE™ to the time you complete your pour should be no more than 5-6 minutes. Heat will significantly reduce your working time. To be certain you have enough time to complete your pour, keep water at room temperature or cooler and avoid the heat of the day if pouring outside.
- H. Using a rubber mallet, tap the surface on which the mold is sitting to encourage air bubbles in the concrete to rise to the back of the surface of the bench. Make note of the time and allow the DiamondCRETE™ to harden undisturbed in the mold for approximately 2 hours. If you are using legs that have a raised plug on the top, be sure and place the notched place holder on top of the slurry within a few moments after pouring. While you're waiting for the bench to set up, thoroughly clean your mixing paddle, buckets and any other tools used with a garden hose.

Project Completion

- A. When DiamondCRETE™ has hardened, usually about 2-3 hours, it's time to be removed from the mold. If your bench was poured outside, move the operation to a garage or interior location before removing from the mold. Next, roll a thick blanket and place it in front of your bench mold and turn the bench out of the mold onto the blanket. The blanket acts as a 'shock absorber' and prevents most finger pinching when working with that much weight.

- B. Remove the Mosaic Mount™ from the glass and using a razor blade, clean up excess concrete that may have flowed over the glass pieces.
- C. Mix some of the reserve DiamondCRETE™ to a very thick paste and grout the bench by pressing the paste into any small holes in the DiamondCRETE™ left between glass pieces.
- D. Leave your bench on the blanket undisturbed for a day or two to increase its strength then it should be elevated on dowels or 2 x 4's to allow air to circulate and complete the curing process of your bench. Curing will take approximately 6 weeks in an indoor environment.
- E. Seal the top, bottom and sides of the bench with DiamondSEAL™.
- F. Install your legs in the ground on approximately 1/2" bed of coarse sand or fine pebbles. The sand allows for proper drainage of water away from the legs as well as providing an even weight distribution. Be sure the top of your installed legs are level then place the bench on top of the legs.

A Note About Legs...

Legs may be purchased from a statuary retailer or nursery and painted or they may be poured with DiamondCRETE™. Check with your Stained Glass Retailer for available leg molds. Other interesting leg options can be found in 'Tiffany Garden Benches' pattern book available from your Stained Glass Retailer. □