Please take a few minutes to read this document. Because jewel glass tiles and mosaics are custom made to order, they differ from other projects and require special handling.

Every effort has been made at the factory to make the installation as easy as possible. These instructions are very important to read, even if you have installed similar products in the past. **Refunds are not possible after the product has been installed.** If you are installing larger glass tiles that are loose (not tape-faced), consult “Installation Guidelines for Larger Jewel Glass Tiles onto Wall Surfaces.” Glass is not approved for most floor applications; in pools, glass is sometimes used for pool waterline borders, but it should only be used in tropical and subtropical climates, not temperate climates.

A. Preparing the Space to Install Glass Mosaic and Tile Projects

1. You should mount glass tile and mosaic only on substrate that is rated to hold it, such as drywall, sheet rock, blue board, as well as cementitious board units (CBUs) such as WonderBoard, Durock, and HardieBacker. The area on which the tile or mosaic is to be mounted must be clean and dry and remain dry—that is, not subjected to moisture. Concrete areas must be allowed to cure for 28 days in warm, dry conditions; in colder or more humid areas, 60 days is the minimum. Wire-reinforced mortar beds should cure for at least seven days prior to installation. **Do not mount glass tile or mosaic onto any flexible surfaces**, such as uninstalled Sintra or other plastic products, as the drying of the cement and grout will cause contraction, which will crack the glass in places as well as altering the grout spacing.

2. If the substrate has joints, these should be filled using the same type of mortar used to set the glass, and fiberglass CBU tape is also highly recommended. Make sure the surface is perfectly level and dry before installation. Any unevenness in the surface will be visible in the final result.

3. All manufacturers now advise the addition of an anti-fracture membrane (also called a “crack-isolation membrane”), which is available in liquid, paste, or sheet form. Because glass expands and contracts at a rate much higher than stone or ceramic, a crack in the substrate will typically be transmitted to the glass, causing it to crack. Anti-fracture membranes reduce the likelihood of this occurring and also provide an important moisture barrier.

B. Dry-laying the Project

1. Almost all glass tiles and mosaics will be used on walls and other vertical spaces, so dry-laying (fitting) the material to the installation space is more difficult than with horizontal spaces like floors. We strongly recommend creating an **exact template** of the installation space, using luan, strong cardboard or similar material, or very thick paper. Then, make sure the glass mosaic fits precisely on the template. If the project needs to fit together in a specific way, the manufacturer provides “maps” of the project, to show
how pieces fit together. It is much easier to adjust the size of the project to the space before installation than after installation. Handle the sheets of the project with extreme care, as glass is very fragile.

2. If the dimensions of the project and the installation space differ, you will need to modify the space or the project. If the project needs to be larger, look for a “piece bag” of extra material that shipped with the project. If the project needs to be smaller, it can be cut down, using a high-quality wet tile saw fitted with a glass-cutting blade.

3. Experienced installers will tell you: It is best to have the client’s approval of the dry-laid project before installation.

C. Setting the Project

1. Mix and prepare the mortar (use a polymer-modified thinset cement) according to the package instructions.

2. Using a fine v-notched trowel (3/16”), apply a first coat (called a “bond coat”) to the installation surface with the flat side of the trowel.

3. Using the notched side of the trowel, apply additional setting material, combing horizontal rows into the surface. This will make the setting bed the proper depth. (Be careful not to apply too much, as cement will come out between the glass pieces in the grout joints: with glass projects, it is exceedingly difficult to “pick” this extruded cement from between the joints without damaging the glass in some way.)

4. For glass that is partly or entirely transparent, use the flat side of the trowel to flatten the grooves in the material to make the surface of the setting bed smooth. Because jewel glass is very thin (1/16”), the setting bed should be relatively shallow. Caution: trowel marks or other irregularities in the setting bed may be visible through the installed product if it has areas of transparency.

5. Thinset dries quickly, so it is necessary to work quickly, before the material dries. Do not allow the thinset to “skin” (partially dry at the surface). If it does, remove it and begin again. Because the rate of drying is variable, it is important to install the mosaic or tiles after you have applied a few square feet of thinset, rather than covering the entire installation area with thinset and then trying to install the project before it sets up a skin.

6. Apply the sections of the taped project from the top left to bottom right (the usual ordering of pieces; see the project map, if there is one). Using light pressure, apply the sheets (tape side to you) in the correct portion of the wall that corresponds to the template.

7. Glass is fragile, but the project has to be set into the thinset at a consistent depth. We recommend using a block of wood (a short piece of 2x4 is fine) and a rubber mallet to tap—very lightly—the project into the thinset. Do this for each sheet, making sure that all are level and even with one another.

8. Make sure that each sheet of the project aligns just right with the ones around it—because the tape is clear, you will be able see what you are doing and to maintain spacing perfectly among the different pieces, whether a mosaic or tiles. The sheets should not be distinct in the project: that is, there should be no gaps, seams, or tight areas. The setting of each sheet relative to the other sheets is one of the most important parts of the installation. The project should look like a whole, continuous work of art. If you feel concerned about certain sheets interlocking just right, it is fine to use 2-3” clear plastic tape to join
those sheets together while they are still on the template. If you need to make adjustments to the sheets or parts of the sheets, it is possible to slit the tape with a utility knife or X-acto blade to move the sheets.

9. After the entire project has been installed, wait at least 24 hours to remove the face tape from each piece.

**Pulling the Face Tape**

10. Once the thinset has dried, the tape must be removed before the project is grouted. Most installers remove tape by peeling slowly but firmly from upper left to lower right corner.

11. It is normal for some pieces of the project to come off with the tape, perhaps a few per sheet at most. Set these aside, noting where they go in the project. However, if you find many pieces are coming off with the tape, then too little thinset was applied—or the material was not given enough time to dry.

12. It is helpful to use an X-acto or similar blade to get a corner of the tape started, before pulling.

13. If there are loose pieces that have come off with the tape, these should be “back-buttered” (thinset applied to the back) and placed into the proper places in the project. Make sure the pieces are level in the project and have the correct grout spacing around them.

14. Allow the project to cure for a minimum of 48 hours before cleaning and grouting.

15. If some of the cement was unevenly applied, it may come out through the grout joints. This extruded material has to be picked out, using a small pick or chisel. Be careful not to scratch or otherwise damage the glass in the process.

**D. Sealing the Project prior to Grouting**

1. Because most glass naturally has “crazing” (fine fissures) and fine pits in the surface, it is important to use a glass sealer prior to—not just after—grouting. Grout is extremely difficult to remove from these fissures unless the protective sealer has been applied. Most products require 24 hours after sealing before the project can be cleaned and prepared for grouting.

**E. Grouting, Sealing, and Cleaning the Project**

1. Make sure the project is clean and free of tape residue before grouting.

2. Use water and a nylon brush to clean the project; if residue persists, use a little warm water and liquid dishwashing soap.

3. Wipe down the project with a dry sponge or soft cloth and allow the project to dry completely.

4. Mix unsanded grout according to the manufacturer’s instructions; for light/pale glass, paler grout colors are recommended, while darker grout is more appropriate for darker colored glass. See the manufacturer’s more specific color instructions if a single color of glass in being used.

5. Apply the grout using a rubber float, pressing firmly to fill the joints, using mostly vertical and horizontal strokes at first, then finishing with diagonal strokes to remove excess grout.

6. Grout takes longer to set with glass than with stone, so allow sufficient time for the grout to start to turn duller and paler in color, an indication that it has begun to set.

7. Wipe away excess grout with dry cheesecloth, taking care not to scratch the glass (grit or other material can scratch the glass, especially darker types of glass). Other materials or methods can often wash out the grout joints, which will require re-grouting.
8. Allow the grout to set up again (turn dull and paler) and then wipe down to a clean appearance with a lightly damp sponge (the sponge should not throw water when it is shaken). Do not allow the grout to dry completely before trying to clean; dried grout is difficult to remove.

9. To remove final grout haze, wipe the project down with a clean, soft cloth. Grout haze remover is also available at most hardware stores.

10. After the grouted project has cured for 48 hours, use warm water and liquid dishwashing soap to clean it. If any residue persists, a soft (#0000) steel wool pad or stone/tile stripper can be used (phosphoric acids do not discolor glass or change grout colors). If grout has accumulated in pits or in fissures, it is possible to use a sealer/ager such as that made by Tenax to reduce the appearance of grout, particularly in darker shades of glass. For paler shades of glass, it is possible to pick tiny bits of grout out with a sewing needle.

11. Finally, the project should be sealed again, to protect both the glass and the grouted joints.

12. After 24 hours, the project can be cleaned with a moderately damp clean cloth or rag.

13. Sealer should be applied from time to time (at least annually) to maintain protection, in accordance with the manufacturers’ guidelines.

14. Regular cleaning with a mild, non-abrasive pH-neutral cleanser is highly recommended. Several commercially available products promise to remove spots, scratches, and haziness from glass; polishing systems that incorporate harsh chemicals—particularly ammonia, hydrochloric acid, metal silicates, or acetic acid—may change the appearance of some stained glass, so it is important to test a spare piece of glass before applying any such product to the project itself.