

Our glass tile is manufactured by fusing clear glass with ceramic glazes at a high temperature. Glass tiles may be installed on interior or exterior wall areas, in wet or dry locations (including in hot or cold environments). Since these tiles differ from ceramic products, attention must be given to these special glass tile installation instructions to ensure a good installation. Do not use standard ceramic tile installation methods as these may result in a finished installation with appearance and/or durability problems.

SUBSTRATE PREPARATION

Since any crack in a glass tile is very visible, the use of a crack isolation membrane (ANSI A118.12) over the entire surface is strongly advised. Many substrates such as mortar beds may continue to cure and shrink over a period of months, and a crack isolation membrane prevents shrinkage or movement of the substrate from transferring through to the tile. If a crack isolation membrane is not used, neither the distributor nor the manufacturer will accept any responsibility for cracking. Install only over well-cured, stable substrates. Substrates should be levelled prior to the installation of the crack isolation membrane. Do not use thin-set to level the substrate under glass tile.

Glass tiles should be installed on walls that are plumb and square. Refer to the current TCNA Handbook for installation methods of glass tile.

Allow for a control joint wherever substrates change and as prescribed in section EJ171 of TCNA's Handbook for Ceramic, Glass and Stone Tile Installation (www.tcnatile.com).

CUTTING

Recommended Tools:

- Wet saw with glass tile blade and/or hand scoring tools
- Safety glasses, gloves

If you've never cut glass or you're unconfident in your abilities, there is good news. With proper cutting tools and techniques, even beginners can learn how to produce clean, accurate glass shapes. New generation cutting tools now make sizing and shaping of glass tiles accurate and efficient with a minimal amount of breakage.

Here are a few points to ensure success as you prepare your glass tiles:

1. Ensure you have a clean work surface to protect the glass from scratches.
2. Have the appropriate tools. Glass can be cut in straight lines, gentle curves, compound cuts. It can have both large and small holes bored into it depending on the requirements of the job. There are a range of tools from hand held scoring tools and breaking pliers up to water jet cutters. Montolit makes a wide range of tile tools for scoring, saw cutting and boring as do other companies.
3. Ensure your glass is at an optimal temperature. When glass is cold, it can become more difficult to cut. Comfortable room temperature conditions are favorable.
4. Wet saw cutting instructions:
 - Orient the tile so that the blade rotates into the glazed side first to minimize chipping. Cut half way through, then flip the tile over and cut the other half.
 - Go slow to keep the glass from overheating and chipping. It takes twice as long, but it works. Use plenty of water or lubricant to keep the blade or the boring tool as well as the glass tile cool. Overheating will cause thermal shock and break the tile.
 - Sand cut edges and place cuts against corners where they can be covered and hidden.

Accuracy

One of the most frustrating problems can be inaccurate cutting. Here are a few tips that may help:

- Square cut outs may break, for instance around electrical boxes. Drill a hole in the corner of the cut to relieve the stress on the glass. For drilling use a core bit made for glass. Use a guide. Use plenty of water for cooling of the glass. Difficult cuts can be made with a water jet.
- Mark where you are going to cut with a Sharpie® type marker, and making sure your cutting wheel is right on the mark.
- Put cork backing on your straightedge tool to prevent slippage. Cork-backed rulers, or cork tape is available at glass supply stores
- The Morton System consists of a line of tools that help with cutting precise angles – and some people find this very helpful.

Safety Issues

- You should always use eye protection when dealing with glass. Do not touch or rub your eyes while working with glass.
- Never hold glass by the cut edge – but rather by holding the flat surfaces.
- Always be aware of what will happen to the glass after it is cut – and if it is going to fall – let it, rather than trying to catch it.
- Always wear shoes with covered toes when working with glass.
- When we cut glass we want a squared off edge – but often there is an area where the glass breaks in a sharp bevel, much like the edge of a razor blade. These can be extremely sharp – and should be ground off immediately or you risk cutting yourself. If you have a triangular scrap with a very sharp point, you should grind or break that point off – or you risk stabbing yourself.

WARNING

This product can expose you to chemicals, including Silica, which is known to the State of California to cause cancer. For more information, go to www.p65Warnings.ca.gov

To reduce exposure to silica dust, only use a wet saw when cutting any tile.

DRILLING

Recommended Tools:

- Drill or coring bit specifically for glass
- Safety glasses, gloves
- Drilling a hole requires the use of a drill bit or coring bit designed specifically for glass. Ensure that sufficient cooling water or liquid lubricant is used. If the drill and glass tile cannot be securely clamped in place, use a guide to assist alignment of the bit. A temporary guide can be made out of a scrap piece of plywood drilled with a hole slightly larger than the coring bit. Holding the guide over the desired location of the hole in the tile, slowly start drilling from the back of the tile, then complete the hole from the face of the tile to prevent glass from chipping off on the exit side of the hole.

INSTALLATION

Recommended Tools:

- **Notched trowel, plastic spacers, shims, laser level, construction level, chalk line, tape measure, pencil**
- All the walls should be plumb, square, and free of movement. Open boxes of tiles and check for consistency before installation begins. Back butter each tile with an approved thin set, such as [Laticrete](#), and make sure you have adequate coverage on the back of every tile.
- If full coverage is not achieved, trowel marks and imperfections in the setting bed may be visible through the glass tile in the completed installation.
- Apply the glass tile into the thin set using slight side to side pressure on the tile. This should ensure full contact and collapse any ridges in the applied thin set.
- If you see any voids in the face of the tile remove the tile and re-apply a thin set. Consult setting manufacturer's guidelines regarding maximum setting bed depth.
- Grout joints should be a minimum of 1/16th between tiles.
- Glass tile's high expansion and contraction requires the installation of movement joints (EJ 171) according to the most recent edition of TCNA Handbook. Prior to grouting, ensure that TCNA guidelines regarding movement joints are followed.
- Using a clean rubber float, apply the grout using even pressure to ensure full even coverage between the joints.
- Use clean dry cheesecloth for the initial cleaning of the grout off the tile. Cheesecloth will help wick away the moisture in the grout without removing too much of the grout between the joints.
- Allow grout to set up but do not let it completely dry. Using a damp sponge wipe off the tiles and smooth out the grout joints to an even smooth plain.
- Once most of the grout is off the tiles, remove the grout haze with clean dry cheesecloth. Do not allow any haze to remain on the surface of the tiles.
- A specialty glass blade, such as one from [Pearl](#), is highly recommended.
- Drilling into the glass requires water. A pilot hole is necessary. Quality drill sets such as these from [CRL](#) are highly recommended.
- Make sure you do not overheat the tile, start the hole slowly, water may be needed to cool down the tile and drill bit.
- **SAFETY**—Always wear safety glasses when cutting or drilling holes. Handle glass tiles with caution. Sharp edges could cut you. Sanding the edges cut with fine grit sandpaper will dull the sharp edge. Wear safety gloves and glasses when sanding.
- Glass is subject to high rates of thermal expansion and contraction. Precautions must be taken to allow for situations when variable rates of movement might occur, e.g., a wall where part is located partially in a heated interior and partially in an unheated exterior. The larger the glass tile, the more crucial the proper use of crack isolation or anti-fracture membranes and movement accommodation joints.

- When installing hardware directly on glass tile use a gasket material around fixtures to isolate the glass from direct pressure.
- Crack isolation or anti-fracture membrane are always recommended with the use of glass tile. Consult with the membrane manufacturer.
- These installation instructions are general guidelines only. We cannot anticipate or be responsible for all field conditions or methods of construction. Glass tile installation is very specialized, and it is important to qualify your installer prior to commencing. A useful resource for installers can be found [here](#).

GROUT

Recommended Tools:

- **Rubber gloves, grout sponges, clean rags, two buckets of clean water, soft grout float, safety glasses**
- **Grout Release can help ease the cleaning of matte finished glass tiles during grouting. Please test before using.**
- Use a grout recommended for glass tile. Follow all manufacturers recommendations.
- Non-sanded Urethane grouts are recommended. Cement and Epoxy grouts may be used if recommended by their manufacturer, test before using.
- Sanded grout may scratch the surface, test before using.
- Glass tile does not need to be sealed. It is impervious.
- Gloss and Matte glass tiles can be scratched. Please be careful in handling and installing.

CARE

Recommended Tools:

- **Microfiber towels**
- For routine cleaning use non-abrasive glass cleaners.

COMMON FAILURES

1. Not following cutting instructions which can cause the color layer to chip, or the surface to the glass tile to chip. Use a glass cutting specific wet saw tile blade.
2. Improper substrate preparation. Level substrate, then use a crack suppression membrane. Do not build up the thin set under the glass tile to level.
3. Not smoothing down trowel marks which shows shadowing behind the glass tile. Knock down notches from the trowel. Back butter larger tiles.
4. Submerged installations (i.e., pools or fountains) must use face mounted mosaics.