



## Installing Tile Murals

### Holy Mortar – Where Do I Start?

#### Helpful Tips

#### Installing Sublimated Tile Murals

With the ever growing popularity of ceramic and glass tile murals, I thought that this would be a good time to discuss installation techniques. This is one of the leading questions I am asked and it is a very important step in the overall process of providing tile products to your customers.

I must first clarify that I am not a tile setter by trade, but I have been involved with many of our high profile jobs and have learned a lot by experience. Tile setting is a unique craft and one would have to work with a professional for a long time to learn all of the nuances of the trade. What I would like to share are some guidelines and basic understanding of the installation process to better educate the dye subber that wants to or already is offering tile murals for residential and commercial applications. Additionally I will offer some tips on affixing ceramic and glass tiles for awards and gifts.

Setting tiles for a tile mural is really no different than setting a tile that is not imaged. With the exception of the glass tiles, there are no special setting materials that have to be used for an imaged mural. There are several manufacturers of available setting material and grout. I usually tell the contractor to use whatever they are comfortable with for the particular type of tile. This is where you need to learn more about tile bodies which I will explore later.

There are several types of tile installation. The most common are inserting a mural in a field of tiles, a standalone mural on a wall with no tile around it and full wall to wall vertical or floor mural. Regardless of the application, here are a few things to consider prior to starting installation.

#### Step by Step

##### Step 1 - Determine the Grout Width

All tiles need to have a grout line/space regardless of whether it is imaged or not. Sometimes people think that an imaged mural needs to be butt jointed, meaning that the tiles are touching one another. Their thinking is that the grout line will disrupt the image. This is probably the biggest misconception that people have about custom tile murals. First of all it is a big no no in the tile industry to butt joint any tile. If there is any type of expansion or contraction in the setting materials or the substrate you are affixing the tile to, they will crack. Second, the grout lines give the murals the mosaic look that makes these custom murals so unique. If you want to hide the grout lines you might as well print a poster instead.



Grout serves an important purpose for tile. Because the tiles cannot be butt jointed, the grout acts a moisture barrier. When water or other liquids get behind a tile it causes all kinds of problems. Water can cause decay of the tile from the backside and also cause damage to the wall or floor that you are adhering to. Mold can also form and I think we all know what that means.

### Step 2 – Grout Spacers

Grout spacers are used to evenly space the tiles during installation. They are usually left between the tiles until the mortar has cured enough to support the tile. Plastic grout spacers come in a variety of sizes and styles. Personally, I like the ones with a protruding handle on them. It makes it easier to remove in the end. Some tiles come with grout spacers built in. These are little ceramic nubs on the four sides of the tile that will align the tile for even grout spacing. These are most common on 4.25" x 4.25" and 6" x 6" tiles.

Side note: When imaging a tile mural, you do not need to allow for grout widths. The rule of thumb is to butt joint tiles in the press, not on the wall.

### Step 3 – What Type of Grout?

The two most common types of grout are sanded and unsanded. Most tile setters will tell you to use unsanded grout for vertical applications because the grout lines are usually very small. Unsanded grout can be used on grout lines up to 1/8" wide. Anything larger should be a sanded grout. Sanded grout can be abrasive when applied. I usually only recommend sanded grout on porcelain and tumbled stone as they are more scratch resistant than the glazed ceramic tiles. Grout lines on tumbled stone are often 1/4" – 3/8" wide and need the more durable grout.

Never use grout on glossy coated tiles. Gloss coatings are very soft and prone to scratching. Even unsanded grout will make surface scratches. Gloss tiles are a decorative tile and should never be used in applications that require grouting. If you want to install a decorative glossy tile mural on a wall, use a tube of caulking and be very careful.

### Step 5 – What Color Grout?

This is also a common question. Often people will try to blend the grout color into the mural to hide it. This goes back to the point I made about grout lines. You want to be able to see the grout lines. It is the whole purpose of why you put this image on tile; you want it to look like a mosaic. We usually suggest that you select a color that complements the mural or the surrounding décor.

### Step 6 – Grout Sealers

The purpose of a grout sealer is to protect the grout from absorbing moisture and staining. I recommend a grout sealer be used in any installations of floors, kitchens, baths and areas prone to moisture. Grout sealers are easy to apply and may require several coats.

## Step 7 – Selecting the Setting Materials

Mortars, also known as thinsets, are what are used to affix the tiles to the substrate. Most commonly, tiles are adhered to waterproof sheetrock or cement backer board. I do not recommend affixing any tile to plywood because it can and will warp. If you do not know which thinset to use, the easiest way to get advice is ask at your home improvement or tile store, but first you will need to let them know what materials you will be installing and what you will be installing them on. Different types of tiles require different setting materials. Here are some of the most common.

**Glazed Ceramic Tile** – These tiles are made with a clay or talc body and are colored by firing on a glaze. The body of the tile is very porous and will absorb up to 16% of its weight in water. This is why ceramic tile are not used in areas where it can freeze. If the tile absorbs water and freezes, it will crack. Because the tiles are porous, it helps absorb the moisture of the setting material allowing it to cure.

**Porcelain Tiles** – These tiles are non porous and are made of the same material throughout. They only absorb ½ of 1% of there weight in water. This is the tile of choice when used outdoors in areas where it freezes. This is also a good choice for water applications such as showers and back splashes. Because it does not absorb moisture, a faster setting thinset should be used. Otherwise, it can take a long time for the thinset to cure.

**Tumbled Stone** – This is a natural product that is also very porous. The main thing to remember, if you are going to grout it, is that the stone should be sealed prior to grouting. Because it is porous and often pitted naturally, the grout will fill these pits and irregularities. By sealing the tile first, the grout will not penetrate and is easier to remove. Stone sealers are very common and easy to use.

**Glass** – Sublimation glass tiles require a very specific thinset. I manufacturer these tiles and have had independent bond strength testing performed on them. The thinset must be a white epoxy product that adheres well to the polymer coating on the back of the glass. Glass tiles are the only ones durable enough to be installed on the floor. Sanded grout is primarily used and is always used on floor installations.

## Step 8 – Let's Install the Mural

Now that we have selected the setting materials, grout width and grout, now comes the fun part. Installation! Of course, you have now read the instructions on properly mixing the thinset and grout. Always follow the manufacturer's instructions. There are no short cuts.

As an example, I will share a recent installation. We were commissioned to create a mural for the lobby of the Brunswick, Georgia Airport. The artwork depicts an old world map of the coast of Georgia. The mural is 3.5' high x 15' long and was imaged onto spacerless 6" x 6" textured wall tile to give it a rustic look.



The installers first started by mapping out a level line for the first row of tiles. A steel bar was screwed to the wall to support the first row of tiles. Wood trim can also be used. The purpose of the support bar is to hold the tile in place while the setting materials cure.

A notched trowel is used to apply the thinset to either the wall or the tile. The size of the notch will be determined by the type of installation and size of tiles that is being installed. Manufacturer's recommendations can be found on the setting materials packaging.

Each tile in the mural is labeled with a number that correspond to a grid printout that accompanies the mural. Murals are usually installed from the bottom row up. After the first row was installed, grout spacers were put in place for the second row. This continued until all tiles were set.

### **Step 9 – Grouting**

After the setting materials had cured, the grout spacers were removed for grouting. Unsanded grout was applied with a rubber trowel to force the grout deep into the grout spaces between the tiles. Once the grout starts to set, it will look like a haze over the tiles. Grout haze removal is simply done by rinsing it with clean water and a sponge. Several rinses are required to remove the excess grout from the face of the tile.

You're done! Actual installation of a mural is relatively simple if you have the right setting materials and grout.

Here are a few other tid bits:

If you have to cut a tile for fit, use a tile wet saw. The coating will not chip off and always cut the tile after it has been imaged.

A lot of tiles are used in awards, trophies and gifts. The best adhesive we have seen to affix tiles to wood, metal, Melamine, plastic, etc. is GE clear Silicone caulking. It has excellent bond strength; it is waterproof and has stood the test of time at our shop.

Tile murals have proven to be a great addition to any business. Whether you are decorating a corporate lobby or conference room with a company logo or creating an original artwork for a residential application, make sure that the installation is done professionally and with the recommended setting material.

**Go forth and tile the world!**

