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Sensitile Terrazzo™, Terrazzo Lumina™, and PIXA™ slab installation guidelines for horizontal and vertical use (tabletops, countertops, wall cladding etc).

General Information

Sensitile Terrazzo™, PIXA™ and Terrazzo Lumina™ are surfacing materials manufactured by Sensitile using proprietary and patented technologies. These materials are composed of micro concrete with embedded light guides. The shape of the light guide varies based on the product line and the selected pattern, allowing the material to have unique properties – PIXA can be back-or front lit, Terrazzo Lumina can be edge or back-lit and Sensitile Terrazzo produces interactive effects with ambient (face) light.

These materials typically ship from Sensitile in a *finished* condition – that is, they are usually manufactured and pre-fabricated to final size and finish per the approved shop drawings - and ready for installation. Please *carefully read and follow the guidelines below* to ensure a successful installation.

Receiving and Handling:

1. Sensitile Terrazzo™, Terrazzo Lumina™, and PIXA™ products ship from our factory in wooden crates protected with cardboard and foam. The slabs are usually stored on their edges within the crates. The crates are designed to be opened on one side, this side will be marked “Open This Side” The crates should be opened very carefully since the slabs may have shifted during transport and may be leaning on the side that will be opened. We recommend that the crate be shimmed up on one end (slightly tilted away) before opening and removing the sides from the crate.
2. On receipt of the shipment, please check crates carefully, any shipping damage should be noted on the BOL at the time of signing for their delivery. We recommend that the crates then be opened carefully and the slabs taken

out and inspected, verify that all items were received in good condition – any discrepancies need to be communicated to us immediately.

3. Our micro-concrete slab materials should be handled and carried on edge. They can be transported within the job site or shop on stone carts. To protect the factory finish we recommend that all surfaces in contact with the materials be padded. The slabs can also be hand carried with vacuum lifters or panel carrying clamps of appropriate lifting capacity. As with any stone or stone like material, these materials can be chipped on the edges or at the corners if sufficient care is not taken in handling.
4. Weight guide - typical Sensitile Terrazzo slabs are 1-1/2” thick will weigh 18-20 lbs/square feet or 90 Kilograms/m².

Storage:

Our products are finish materials and typically ordered and installed when the project is in this final stage. However, if the project schedule is such that long term storage, lasting several weeks or months is deemed necessary then it is crucial that the materials be stored properly.

Storage conditions should be indoors, in a clean and dry, temperature and humidity controlled environment that does not have wide and sudden temperature fluctuations, void of condensation and or leaks. The wooden crating that these materials ship in or designed for safe transit only and are not recommended for long term storage. Since the crates are lined with foam, they are quite air tight and may not allow the material to breathe properly. For long term storage, Since concrete continues to cure for many weeks from manufacture, it is important to air out the materials such that each slab or tile receives adequate ventilation on both its faces. Stored materials should be inspected at regular intervals to ensure that storage conditions are adequate.

Preparation:

1. Please review all drawings and ensure that areas to receive the materials are flat, level and sized correctly. The sub-top and or vertical supports should be rigid and of sufficient strength to support the weight of the material, any unsupported lengths or cantilevers might need to be reinforced with metal brackets or additional blocking. This ensures long term stability of the installation.
2. We recommend that all work be performed by a trade contractor, tile and marble setters, stone and granite installers and finishers who are thoroughly competent to execute the work and have had successful experience with projects of similar magnitude to this project.
3. Our custom cast slabs should rest on a sound sub-base, commonly this is made of plywood. For vanities, bar tops and other applications which will encounter moisture or high-humidity, we recommend a minimum of 3/4" thick marine grade plywood. For smaller single slab vanities and counters that have periodic internal supports, a sub-top might not be necessary – we do recommend that the slabs be supported at 16" intervals apart from supports close to the outer edges. If the project has long cantilevers, or unsupported sections, they should be discussed with us in advance.
4. For vertical installations where the material is used as a cladding on a wall, barface, counter face etc, it is imperative that the supporting wall or structure be able to carry the load of the material. If the materials are to be used as a free standing wall or partition, then the support framing should be sound and rigid enough to take the resulting loads. In both cases if the weight of the slab is resting on a horizontal surface then it must be cushioned and it must be ensured that that surface in contact is flat and level to the slab edge.

Installation on horizontal surfaces:

1. If the installation involves more than 1 slab, than we recommend dry fitting all slabs before actually setting the materials in place. If the slabs were manufactured based on a shop drawing, they will be labeled and marked with a slab number based on the drawing, this can serve as a guide during the set-up.
2. During the dry fit, it would be advisable to determine which seams and slabs will need to be “shimmed” for proper level. At this time seam locations and seam widths should also be marked and adjusted for correct fit. Care should be taken during this phase since the slab edges can be damaged and chipped if they are butted together.
3. Once the installation is verified with the dry fit, it is possible to start setting the slabs in place. This is usually done from a corner or end piece. Each slab should be leveled and placed in its marked position. Given the weight of our counters, dabs or “circles” of silicone caulk are enough to hold the material to the sub-base. Being a resilient material, Silicone also helps to absorb humidity or temperature related expansion and contraction in the sub-base. Rigid adhesives like epoxies should NOT BE used to bond the slabs to a dissimilar material like plywood which can shrink or expand based on changes in humidity.
4. Now the next slabs can be leveled and slid up to the first slab. We recommend that a generous amount of seaming material be applied to the slab edges. This seaming material should be allowed to squeeze out of the seam and it must be ensured that the seam is entirely filled so that no leaks are able to seep into and especially underneath the slabs. Depending on the type of seaming material it might be advisable to protect the area around the seam with some masking tape.
5. Typically seams are 1/16” to 3/16” wide and recommended seaming materials are:
 - A. Color matched grout pre mixed and sold in a caulk tube - as manufactured by Laticrete, TEC or Custom Building Products

- B. Color matched polymer modified grout as would be used for tiling – if this method is used, it is important to seal the grout once it is dry and cured.
 - C. Clear or colored Silicone
 - D. Epoxy based joint compound as used by Granite installers – a popular brand is Akemi
6. Excess seaming material should be carefully wiped off with a wet finger, or a plastic scrapper – wet or excess seaming material should **NEVER BE SCRAPED** with a razor blade any sharp metallic instrument – our horizontal surfaces may be sealed with a protective clear coat which can get damaged or scratched if a razor blade or knife is used.
7. Once the seam has set-up and has been sealed if needed, the bar or counter should be ready to use.
8. Given that most cabinets and sub tops are made with wood based products, some settling and movement might be experienced during the first few months of the installation, at that time it might be necessary to examine the seams to ensure that they are intact and replenish the seaming material as necessary.

Installation on vertical surfaces:

1. If the installation involves more than 1 slab, than we recommend dry fitting all slabs before actually setting the materials in place. If the slabs were manufactured based on a shop drawing, they will be labeled and marked with a slab number based on the drawing, this can serve as a guide during the set-up. For vertical installations it is best to this on a level floor.
2. During the dry fit, it would be advisable to determine which seams and slabs will need to be “shimmed”. At this time seam locations and seam widths should also be marked and adjusted for correct fit. Markings can be made on the surface to be installed if needed. Care should be taken during this phase since the slab edges can be damaged and chipped if they are butted together with too much force.
3. Once the installation is verified with the dry fit, it is possible to start setting the slabs in place. This is usually done from a corner or end piece. Each slab should be leveled and placed in its marked position.
4. For vertical installations there are several modes of installation, these are usually discussed in advance for each project. Please see below for different types of installation
5. Embedded steel plate: This is a common mode of installation for vertical surfaces, in this method Sensitile provides 1/4” to 3/8” mild steel plates that are embedded into the slabs per the agreed upon drawings. These plates can then be tapped to the required thread size and then used with z-clips or other methods to attach panel to substrate.
6. Pins or Anchors: Another common mode of vertical installation includes the use of pins and or anchors (such as manufactured by Halfen, Keil anchors and others) to attach the slabs to the substrate or framing system. For this method, slabs are usually drilled on site following the drilling and fabrication instructions noted below.
7. Adhesive bonding. This mode of installation involves the use of stone adhesives and mortars to bond our materials to a prepared substrate. We suggest the use of quality products manufactured by Laticrete, TEC, Maipei or similar established brand names. If applicable the back of the slabs to be

bonded can be scarified. For projects using large slabs of material, adhesive only installations are generally not recommend due to dissimilarities in the substrates environmental response.

8. Free standing vertical installation and other special needs: For slabs that are to be free standing or for help with the detailing of other special needs, please consult us.

Fabrication guidelines:

Our micro-concrete products are manufactured for each project using an approved shop drawing. This affords us the opportunity to allow them to ship complete, as-a-kit of parts that is ready for installation. Typically fabrication is not needed on site. However, these products are able to be modified in the field or fabricated in a stone shop if needed. Below is a guide that can followed

Drilling:

Our micro concrete products can be drilled like any stone products using diamond tooling. This operation can be performed wet or dry but there are some aspects to keep in mind.

- It is important to keep the holes sufficiently away from the edges – typically the edge of the hole should be at least 2” away from the edge of the slabs
- If drilling dry, the bit should not be allowed to get too hot, it may be advisable to introduce some spray water in order to lubricate and cool or to take breaks allowing the material and bit to cool between passes.
- When drilling, it is also important to keep in mind that many of our slabs may have internal steel reinforcement, diamond tooling will typically not have a problem with this, but the steel may be exposed on the inside edges of the hole – important to keep in mind if the hole is to be visible for your application. For such holes we recommend having us pre-cast them into the material before shipping.

- Our materials will also have light channels of different shapes embedded into them – when drilling it best to avoid these.
- For wet applications, it is imperative that the edges of any drilled hole be sealed with a high performance penetrating sealer. We recommend the use of Stone Tech Pro's Bulletproof sealer for this procedure.

Cutting:

Our micro concrete products can be cut like any stone products using diamond tooling. This operation can be performed wet or dry but there are some aspects to keep in mind.

- When cutting it is important to keep in mind that the materials have embedded light guides and channels. Trimming or removing some material from an edge is usually an easy operation, however cutting through the slabs should be carefully considered. Our slabs contain light guides in different positions, pattern and shapes; these light pipes also function differently based on the product type, this does need to be understood before cutting the slabs.
- The cutting operation can be performed both wet and dry, if dry cutting do not allow the material to overly heat up. It is advisable to use a fresh blade or introduce some spray water in order to lubricate and cool the tooling or to take breaks allowing the material and blade to cool.
- When cutting, it is also important to keep in mind that many of our slabs may have internal steel reinforcement. This reinforcement is in the form of rebar, or mesh and is usually held at least a 1/4" away from the edges. Diamond tooling will typically not have a problem cutting through this, but the steel may be exposed on the cut side – this is important to keep in mind if the cut edge will be visible.
- Whenever our slabs are cut, it will reveal a fresh edge which may not have factory applied sealer. It is imperative that the edges of any cut edges be sealed with a high performance penetrating sealer. We recommend the use of Stone Tech Pro's Bulletproof sealer for this procedure.

CNC equipment

Our slab products can be processed using stone CNC machinery and waterjet equipment. Since there are many variables from machine to machine, and from the type of operation to be performed, the parameters for this will have to be determined using test passes.

Regardless of the type of equipment used, the above guidelines for drilling and cutting will apply and should be adhered to.

Contact:

For further information or for any special conditions and questions, please do not hesitate to contact us via phone 313.872.6314 or email: info@sensitile.com