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Sensitile Terrazzo™, Terrazzo Lumina™, and PIXA™ - guidelines for tile floor installation.

General Information

Sensitile Terrazzo™, PIXA™ and Terrazzo Lumina™ are materials manufactured by Sensitile Systems using its 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.

Receiving and Handling:

1. Sensitile Terrazzo™, Terrazzo Lumina™, and PIXA™ products ship from our factory in wooden crates protected with cardboard and foam. The tiles and 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 tiles/slabs may have shifted during transport and may be leaning on the side that will be opened.
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 tiles/slabs be 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 tile and 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, Terrazzo Lumina and PIXA tiles will weigh 11 lbs per square foot (or 55 kilograms/m²) for 7/8" thickness. Slabs are typically 1-1/2" thick and will weigh 18 lbs per square foot (or 90 Kilograms / square meter).

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 are designed for safe transit only and are not recommended for long term storage, Since concrete continues to cure for many weeks from manufacture, for long term storage lasting many weeks to months, 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:

The following work should be complete and approved before installation of Sensitile Terrazzo™, Terrazzo Lumina™, and PIXA™ Floor Tile is begun:

1. Surface to receive Sensitile Precast Tiles shall be plumb, level, and true with square corners, maximum variation from required plane shall be 1/8" in 10 feet. Concrete surface to be steel troweled, with a fine broom finish and no curing compounds.
2. Apply Self-Leveling Underlayment to concrete floors where determined by architect in conjunction with the tile contractor. Leveling coat shall be compatible with setting mortar.
3. Before setting, ensure surfaces are free from coatings, curing compounds, oil, grease, wax, or dust.
4. All anchors, outlets and other inserts must be in place.
5. Report all unacceptable surfaces to architect; do not set until surface areas are corrected.
6. Crack Isolation Membrane to be used on non-directional cracks, shrinkage cracks, and all areas where crack transfer is suspected.
7. Locate and determine expansion joints based on building control joints, cold joints, sawed joints, and recommend expansion joints based on TCA (Tile Council of America) and CTMA (Concrete Tile Manufacturer's Association) specifications.

Installation:

General Guidelines:

1. All work should be performed by trade contractor, tile and marble setters, and finishers who are thoroughly competent to execute the work and have had successful experience with projects of similar magnitude to this project.

2. Follow all current TCA and CTMA guidelines

3. Inspection of areas to receive tile for the following:

- Defects in existing concrete work that may affect proper execution of terrazzo tile laying work
- Variances beyond allowable tolerances (i.e. cracks, deflection, voids)
- L/720 is the maximum acceptable deflection --- larger format tiles (24" x 24" and larger) will require even higher rigidity in the floor
- Maximum variation in subfloor not to exceed 1/8" in 10 feet from required plane
- [Recessed Areas] - Self-leveling underlayment in areas not meeting allowable tolerances
- [Raised Areas] - Scarify or grind high areas not meeting allowable tolerance

4. For the installation of Sensitile Terrazzo, Terrazzo Lumina and PIXA tiles and slabs we recommend a **Latex modified Portland Cement Medium Bed Mortar Bonded installation.**

- Follow the best practices in the TCA and CTMA Handbooks for Tile Installation
- Use of a self drying type medium bed mortar (like Ardex S 20, or TEC Medium-Bed) is recommended.
- Color Blending: The aggregates used in our Sensitile micro-concrete products have a natural color range and slight tone variations are to be expected from tile to tile. Mix tiles from different crates before installation to ensure a good blend of shades.
- Use a minimum 3/8" x 3/8" x 5/8" U or square notched trowel.
- Press tile into mortar bed while sliding tile back and forth in a perpendicular direction to the combed mortar to achieve minimum coverage of 95% - do not use blunt force like a mallet or other instrument during this process.
- Protect for 48 hours - colder temperatures will require more time.
- All units to be installed level, square, parallel, except where otherwise indicated in a true plane with adjacent units and other floor finishes.
- Maintain a minimum joint of 1/8" --- larger tiles will require a larger (up to 1/4" wide) grout joint. A polymer modified grout is recommended. All grout joints MUST be sealed when fully cured.
- The layout should be designed without having to use Sensitile Terrazzo, Terrazzo Lumina and PIXA precast Tiles smaller than half-size.
- Tiles that are cut on site, MUST be sealed on the exposed edges with a penetrating sealer (Stone Tech Pro Bulletproof or equal) before grout is applied.
- Junctions: Areas that meet other flooring to require metal divider strips 16-gauge angle zinc

5. Control joints are required:

- Over all structural expansion joints, follow TCA specifications
- Every 24 to 36 lineal feet and at all corridor intersections
- All perimeter edges to have soft joints
- Architect to choose expansion joint material
- Architect to determine final locations of all control joints.

6. During installation, care must to be taken to protect the area from other trades and construction traffic.

Finishing

1. Grouting:

- Comply with TCA and CTMA guidelines

2. Finishing:

- Sensitile Terrazzo, Terrazzo Lumina and PIXA Tiles are sealed at the factory --- final seal coats must be applied on job site after installation is fully cured.
- Sensitile Terrazzo, Terrazzo Lumina and PIXA should not require Grout Release in most cases, however it is recommended to test or this with the specific grout that is being used for the project.
- After the grout has set, clean the floor thoroughly with a mop and/or sponge. Allow the area to dry thoroughly --- this can take 72 hours or more based on environmental conditions.
- Once the entire floor is dry, apply the final coats of penetrating sealer following the sealer manufacturer's guidelines. We recommend the use of Stone Tech Pro Bulletproof sealer. Before applying the final coats of sealer it is critical to ensure that the floor is both dry and clean.

Additional Fabrication guidelines:

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 tile or slab
- 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 tiles and 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 and cutting through the tile and slabs should be performed carefully. Our tiles and 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. We recommend some practice cuts be performed before the final.
- 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 form 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