

Terra-Crete

Terra-Crete is a combination of natural materials and mechanical processes that produce a unique and durable product that will last for the life of the building in which it was placed. By combining stone and glass aggregates with concrete and then polishing and densifying the product, you can offer your customer's a truly unique floor at a fraction of the cost as compared to other aggregate flooring options.

With regard to flooring options that compete with Terra-Crete, epoxy terrazzo would probably be the closest comparable product. Both floor products offer the versatility of adding different colored aggregates as well as the ability to hone or polish the product's finished surface. The differences between the two products are:

- **Total Cost**
- **Design Versatility**
- **Maintenance**

Total Cost(s)

Terra-Crete, in most markets of the U.S. & Canada, should sell for an approximate price of \$20 per square foot; this price does not include preparation of sub-grade or concrete, but does include placement, finishing, aggregates* and polishing to a 1500 grit. The sub-grade preparation and concrete should have a cost of \$3.00-4.00 per square foot; at a 4" depth. So the total cost for a new, 4" slab of Terra-Crete should be around \$24 per square foot to the end-user customer.

**depending on Terra-Crete aggregates used, the cost can fluctuate due to concentration or species of decorative materials*

For epoxy terrazzo flooring, the cost of installation and materials is approximately \$30 per square foot plus the cost of the concrete slab upon which it is placed.

Design Versatility

Terra-Crete allows for conventional products to be used in unconventional and unique ways. By having the freedom to place glass, marble, granite, semi-precious stones, brass or zinc strips in the surface of the concrete, the end user customer has the opportunity to tailor fit their flooring to their overall design preference.

Epoxy terrazzo flooring also allows the use of colored aggregates and strip, but the size of the aggregates that can be used are limited because resinous terrazzo is usually installed at less than 3/8" thickness. Also, any change in aggregate color or size requires the use of a zinc or brass strip to separate the different aggregates.

Maintenance

Terra-Crete slabs require minimal maintenance because there is no coating or treatment that can wear from the surface. Regular maintenance consists of washing with clean water and, if necessary, spot treating with a neutral cleaner like E-Z Clean.

Epoxy terrazzo flooring is usually finished with a sealer and subsequent coatings of wax. The wax must be stripped and re-applied as often as the amount of traffic merits to keep the floor looking good. As the floor ages and waxes are applied and then periodically stripped, the floor starts to exhibit signs of erosion of the matrix; this requires a mechanical grind or honing step to flatten the floor back to its original appearance. The process of maintaining an epoxy terrazzo floor then starts again.

With regard to product competition, epoxy terrazzo flooring will always have a place in a designer's repertoire because the matrix colors can be adjusted to any color of the rainbow, whereas Terra-Crete has limited color selections for the concrete matrix by way of integral coloring products. However, Terra-Crete offers another option for designers and architects that want an original, exposed aggregate flooring choice with a more natural feel to it.

Much like polished concrete, the demand for this product and process can only increase because of its design versatility and maintenance cost savings. By combining an age-old concept with modern diamond and chemical technology, a beautiful yet maintenance intense flooring option has been enhanced to make this an attractive option for aesthetics' oriented and/or high traffic applications.

Mix Design

A successful Terra-Crete installation is best achieved by ensuring that the grinding processes not occur before the slab has reached a minimum of 4,000psi. For this reason, the mix design can be modified to meet the time constraints of the project by adjusting the 28 day strength rating of the concrete.

For example, if a Terra-Crete installation needs to be completed in a three week period, then the mix design should ensure that the slab reaches 4,000psi by day 18 so the grinding and polishing process can be finished on schedule.

By cutting the Terra-Crete at or above 4,000psi, the contractor has the best chance of avoiding any skim coating or patching because the aggregates are being held in place by the cured concrete. Avoiding skim coats or patches is important because polished concrete and stone are very abrasion resistant materials whereas some patching products run the risk of dis-bonding or failing over time. Also, skim coats and patch will never completely match the concrete or aggregates in color or appearance. Another benefit to avoiding a skim coat or patching is it saves money; both in labor and material cost.

Pre-pour Planning

The pre-pour planning may consist of a simple meeting with the owner(s) to establish how the finished product will ultimately look or it may be a series of meetings where options and samples are offered. Regardless of the quantity of meetings, the quality of these meetings is paramount to the overall success of the project.

The overall design, control joint placement and material quantity required will be planned so that all necessary materials will be available at the time of placement. This also avoids the possibility of long lead items, such as semi-precious aggregates or custom brass inlays, from not arriving prior to the scheduled placement.

Proper Mix Design for Terra-Crete (General Guidelines)

1. Portland Cement Content variable based on time schedule – min. 6 bag mix
2. Aggregate size not to exceed 3/8” in size
3. Slump of 4”
4. Accelerator variable based on time schedule
5. Air entrained in exterior installations

Terra Crete Placement

Beginning with a well compacted sub grade of coarse and fine aggregates (CA-6), pour concrete into work area. Strike off and bull-float as soon as is practical.

After concrete has set enough to support weight, use Jitterbug to vibrate aggregate down into the wet concrete. It is important that no areas are missed because anywhere that aggregate is left near the surface will cause this material to be exposed during the grinding process. Once the Jitterbug process is complete, bull float surface again to smooth the concrete surface.

Place decorative aggregates or metal strips after bull floating. For strip, insert strip straight down into wet concrete by tapping it into the surface. Avoid tilting or angling the strip as it is inserted as this may leave void(s) between the concrete and strip. For the decorative aggregates, the only general rule for material quantity is a maximum of 3 pounds per square foot.

Once all aggregates and strips are in place and concrete has reached sufficient hardness, begin troweling process. The troweling process can be done by hand or with a walk-behind trowel machine. Steel float blades are required for the best possible finish.

After troweling, cover surface with polyethylene sheeting to protect as well as aid the curing process.

After allowing cure to a minimum 4,000 PSI strength, remove plastic and begin grinding and polishing process.

For the mechanical portion of the Terra-Crete process, the starting grit will be determined by the concrete hardness, aggregate concentration and aggregate size. For instructional purposes, we are offering the full process from start to finish, even though some steps can be omitted:

1. 30 Grit 10S Segment (Wet) - *optional**
2. 70 Grit 10S Segment (Wet) - *optional**
3. Edge Work to 100 Grit Terrazzo finish (Wet)*
4. 100 Grit Terrazzo Pad (Wet)
5. Edge Work to 400 Grit REDZ (Dry)
6. 200 Grit Premium Plus Pad (Dry)
7. Densifier Application
8. 400 Grit Premium Plus Pad (Dry)
9. 800 Grit Premium Plus Pad (Dry)
10. Densifier Application
11. Edge Work to 800 Grit REDZ (Dry)
12. 1500 Grit Premium Plus Pad (Dry)
13. 3000 Grit Premium Plus Pad (Dry) - *optional*
14. E-Z Seal+ Application**

*All steps up to and including the 100 grit Terrazzo, should be performed wet to aid in the cutting process which will provide a more consistent scratch pattern and better overall clarity.

**For E-Z Seal+ application, the STI application kit should be used for the most even placement of the sealer.

Tips for Success

The following are a couple of important points to ensure success on each and every placement:

- Plan Ahead – For design and material choices
- Joint Placement
- 3/8”- mix - 4” slump
- Min. 4,000psi before cutting
- Timing is everything
- Tightly pack concrete around aggregate even if it makes it deeper
- Plastic cure
- Protect before and after
- Don't Oversell – Original product that will always be unique and never look *exactly* like the sample or mockup

