



THE NATIONAL  
**TERRAZZO**  
— & MOSAIC ASSOCIATION —

# Choosing the Right Terrazzo System

Comparison of Benefits

**Cement Sand-Cushion vs. Epoxy**



The majority of terrazzo projects installed today are the thinner-set epoxy system, and that number has grown exponentially over the past few decades. Fewer cement-based installations are specified, though the traditional sand-cushion system can be the right option for specific situations.

Both systems are highly durable and long-lasting, seamless, grout-free finish, offer the lowest maintenance requirements of any flooring, and can be repaired and refinished for the life of the building.

# Cement Sand-Cushion Terrazzo



## Design & Aesthetic Appeal

- **Traditional Look:** Offers a classic and timeless appearance.
- **More Muted Tones:** Typically features softer, more subtle colors.

## Installation Considerations

- **New Construction Only:** Generally not suitable for renovations due to its thickness and weight.
- **Divider Strips:** Required every 4-5 feet.
- **Lower Material Costs:** Generally less expensive in terms of raw materials.
- **Thicker, Heavier:** A depressed slab is required for proper installation.
- **Flatter Finish:** Achieves a flatter floor due to the 2.5-inch underbed, which can correct deviations in the concrete.
- **Slower Installation:** Longer drying and curing times.
- **More Labor Intensive:** Requires skilled labor and more complex installation processes.
- **Messier Installation:** Involves slurry from wet grinding.
- **Less Dependent on Jobsite Conditions:** Can be installed in a variety of conditions, including below grade, and is less moisture-sensitive.
- **Expertise Required:** Fewer contractors have the expertise to install sand-cushion terrazzo.



## Performance compared to epoxy

- Less Stain Resistant
- Less Crack Resistant

# Epoxy Terrazzo

## Design & Aesthetic Appeal

- **Wider range of aesthetics,** including the classic appearance of cement terrazzo.
- **Unlimited Colors:** Offers a vast range of vibrant colors and design possibilities.
- **Divider Strips for Design:** Divider strips are used more for design purposes rather than structural necessity.



## Installation Considerations

- **Thinner, Lighter Weight:** requires less slab depression and is suitable for upper stories.
- **Faster Installation:** Quicker drying and curing times.
- **Less Labor Intensive:** Simpler installation process.
- **Requires Flat Concrete:** The underlying concrete must be flat (1/4 inch in 10 feet).
- **Suitable for Renovations:** Can be installed over existing surfaces, including cementitious or epoxy terrazzo, brick pavers, quarry tile, marble, or other natural stones, tiles, or wood.
- **Moisture-Sensitive:** Not suitable for installation in wet conditions; moisture barrier membranes are standard.

## Performance compared to cement

- **More Stain Resistant:** The finish is non-porous, antibacterial, and highly resistant to stains. It does not absorb moisture.
- **More Crack Resistant:** Less prone to cracking. Crack isolation membranes are standard.

## Summary

When choosing between cement sand-cushion terrazzo and epoxy terrazzo, consider the project's specific requirements, such as design flexibility and installation conditions. Cement sand-cushion terrazzo offers a flatter finish due to its thick underbed, making it suitable for projects where floor flatness is critical. Epoxy terrazzo, on the other hand, offers more design flexibility and quicker installation but requires a flat concrete substrate, often necessitating additional preparation. Both systems are durable and low-maintenance flooring options, but each has distinct advantages and limitations that make them suitable for different applications.

## Expert Insights

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### Experience and Perspective

Mark Moreal, Vice President of O.A. Bertin Company in Cleveland, has extensive experience with both cement sand-cushion terrazzo and epoxy terrazzo. His company, founded in 1926, has a longstanding reputation for excellence in terrazzo installations.



### Case Study: North Olmsted School District

For the [North Olmsted School District's](#) new 330,000-square-foot campus near Cleveland, the choice of cement-based sand-cushion terrazzo was driven by the desire for a seamless, durable floor. This 23,000-square-foot LEED Silver project combined traditional terrazzo, featuring flooring complemented by bright epoxy accents. The project faced challenges such as rainy weather, but cement terrazzo's flexibility in various conditions allowed the installation to proceed without delays.

## Key Insights

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- **Cement Sand-Cushion Terrazzo:** Ideal for below-grade applications and projects with moisture concerns. Offers a traditional look and can be installed in non-temperature-controlled environments. Installation requires more time and labor, but the finish is durable and low-maintenance.
- **Epoxy Terrazzo:** Suitable for renovations and projects with tight timelines. Offers unlimited design flexibility, higher tensile-compressive strengths, and ease of maintenance. Lightweight and ideal for multi-story buildings.



## Experience and Perspective

Michael Maraldo, president of Southern Tile & Terrazzo in Houston, brings a wealth of experience to the terrazzo industry, continuing a family tradition that began in Italy. Established in 1960, his company has been recognized for its excellence, winning the NTMA Job of the Year twice with sand-cushion installations.

## Case Study: 2022 Job of the Year Museum of Fine Arts, Houston

The 52,000-square-foot sand-cushion terrazzo installation at [Houston's Museum of Fine Arts](#) was named the NTMA 2022 Job of the Year and the sole cement-based project among the award entries. The new installation responded to an existing 1958 terrazzo installed by the contractor's father, showcasing its durability and timeless appeal. The project highlighted the advantages of sand-cushion terrazzo in high-moisture environments like Houston.

## Key Insights

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- **Sand-Cushion Terrazzo:** Known for its longevity and resistance to moisture, it is ideal for humid climates like Houston. It requires skilled craftsmanship, which is becoming rarer as the industry shifts towards epoxy systems. Sand-cushion terrazzo may be more affordable due to rising costs of epoxy resin.

- **Epoxy Terrazzo:** Preferred for its faster installation and design flexibility, particularly in renovation projects and areas with lower moisture levels. Epoxy is more sensitive to moisture but has been improved with moisture and crack membranes to address early issues.

## Final Thoughts

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Both experts emphasize the importance of choosing the right terrazzo system based on project specifics. While epoxy terrazzo offers numerous advantages, the traditional craftsmanship and reliability of sand-cushion terrazzo continue to make it a valuable option, especially in moisture-prone environments.