

# Terrazzo

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In recent years, terrazzo has experienced a resurgence in popularity throughout the United States. Ease of maintenance, strength, design flexibility, and aesthetics are reasons why more and more designers and specifiers are choosing terrazzo finishes. In Phoenix, terrazzo has been used at the Phoenix City Hall, the City of Phoenix Criminal Justice Courts Building, the Sandra Day O'Connor Federal Courthouse, Bank One Ballpark and the recently completed Casino Arizona in Scottsdale. Terrazzo is the ideal flooring material for use in airports, schools, office buildings, libraries, retail facilities, museums, convention centers, criminal detention facilities and clean manufacturing areas. It is also being installed in custom homes, hospitals, churches and restaurants. It is the ideal material for use in areas subject to heavy foot traffic and hard use, but where aesthetics and ease of maintenance are of prime importance. Terrazzo has the advantage of being a seamless finish (no grout joints), it does not need protection from wear (shoe leather is one of the finest polishers of terrazzo) and it will not absorb most staining substances. Terrazzo is a highly decorative finish yet has the lowest life cycle costs of any popular flooring material in use today.

The most common terrazzo being installed in the United States at this time is a poured in place, cured, ground, polished and sealed building material used as a finish on floors, walls, stairs and countertops. It consists basically of aggregate chips suspended in either a modified cementitious or a resinous binder (matrix). By varying the proportions, size and color of the aggregates and the color of the matrix, the Designer can produce an unlimited variety of harmonies. In addition to the use of traditional marble (crystallized limestone) aggregates, one can add glass, plastic, Mother of Pearl or other rock capable of taking a polish. Zinc or brass strips are also used in the terrazzo systems for accent, color separation and as a transition to adjacent finishes. Commonly referred to as "thinset terrazzo" today's modified cementitious (POLYACRYLATE) or resinous (EPOXY) terrazzo is installed at a nominal 3/8" thickness directly on to a prepared concrete substrate. Thinset systems have, for the most part, replaced older style sand cushion cement terrazzo installations which required a recessed slab and divider strips at 3'0" centers.

A brief explanation of the two most popular terrazzo systems may be helpful.

A) Polymer modified cement matrix (Polyacrylate) Terrazzo. This is basically a modified white cement powder to which is added an acrylic "milk" to form a cementitious "binder". Selected aggregates (chips) are added and it is poured, ground, grouted, polished and sealed to form thinset terrazzo.

Some of the advantages of a POLYACRYLATE system are:

- 1) Usually not affected by moisture vapor transmission.
- 2) Non-yellowing in Ultra-violet light conditions.
- 3) Lower cost than resinous systems.
- 4) Can be installed indoors and outdoors.

Limitations of POLYACRYLATE terrazzo:

- 1) Less flexible than resinous systems in terms of flexural strength.
- 2) Lower tensile and compressive strength than resinous systems, requires a sound concrete substrate.
- 3) Cannot achieve the range of colors available in resinous systems.
- 4) Care must be taken to maintain color consistency throughout an installation.

B) Resin matrix terrazzo (EPOXY). This is a two part 100% solids epoxy system where a resin and a hardener are combined with selected aggregate chips, poured, ground, grouted, polished and sealed to a specified thickness to produce a strong flexible veneer flooring system.

Advantages of EPOXY matrix terrazzo:

- 1) Unlimited choice of matrix colors possible, including bright "primary" colors.
- 2) More chemical and stain resistant than cementitious systems.
- 3) Greater flexibility for use on structural slabs and multi-story applications.
- 4) Can be installed with minimum use of divider strips for sanitary situations.
- 5) Quickest cure time of all terrazzo systems.
- 6) Can be used over rigid plywood substrate on floors and counter tops.
- 7) When installed with a flexible membrane, epoxy terrazzo can absorb some horizontal slab movement.

Limitations of EPOXY matrix terrazzo:

- 1) Not resistant to moisture vapor transmission in substrate without use of a MVT barrier system.
- 2) More costly than POLYACRYLATE terrazzo.
- 3) Light colors and white colors can yellow in Ultra-violet light – not recommended for exterior use.
- 4) Care must be taken to avoid staining caused by reaction with brass divider strips.

In specifying terrazzo, it is important to consider the substrate and to choose the appropriate terrazzo system which matches the structure and the project budget. Terrazzo must have a smooth, level, dry, crack free, structurally sound substrate. If there are cracks or joints in the substrate they must be considered by the terrazzo contractor as part of his installation. As noted above, POLYACRYLATE systems are excellent for slab-on-grade situations

## Terrazzo continued

(due to potential for moisture vapor transmission through structural slab) and EPOXY is often the best choice for multi-story buildings. For economic installations and projects where functionality is the primary consideration, POLYACRYLATE is the usual choice. EPOXY terrazzo is more appropriate where strong primary colors, structural flexibility and maximum design capability are called for. The possibility of creating a one-of-a-kind custom scheme is available to the Architect-Designer regardless of the system selected. It is also possible to use pre-cast terrazzo for stairs and landings, wall base and countertops. Precast can be obtained in both an epoxy or cement terrazzo matrix. Upgrading a terrazzo scheme by specifying glass, plastic or Mother of Pearl chips, use of brass strips (in lieu of zinc), multi-color jobs, intricate strip and color schemes etc. will increase the square foot costs for both POLYACRYLATE and EPOXY terrazzo.

For assistance in specifying terrazzo, contact the National Terrazzo and Mosaic Association at [NTMA.com](http://NTMA.com) or by telephoning their Hotline at 1-800-323-9736. The NTMA offers technical assistance, design ideas, care and maintenance instruction and can provide names of qualified terrazzo contractors nationwide. In the Arizona marketplace, the prime resource is Advance Terrazzo Company (602) 253-9400. They can provide guide specifications, construction details, budget pricing and a full range of technical knowledge and expertise concerning terrazzo installations throughout Arizona. They will assist Architects-Designers-Developers etc. with custom terrazzo color samples. A guide tour of their showroom is an educational experience where one can see all the various terrazzo formats in one location. They are located at 1217 E. Gibson Lane in Phoenix.

To take full advantage of terrazzo as a building material, it is helpful to remember some of the advantages it can offer the Architect-Designer and end-user. It is a material that can be considered for use purely for functionality because of its strength, ease of maintenance and longevity. As a decorative material one can create designs and patterns not always possible with other flooring materials. Logos, motifs and pictorial images can be created, and the possibilities are limited only by one's creativity and imagination. Terrazzo color formulas can be varied to conform with the design style of any project. (i.e.: stylized look for entertainment architecture, sophisticated blends for public buildings, residential styles for custom homes, functionality for prisons, hospitals etc. elegant appearance for libraries, museums or financial institutions).

To be assured of a quality terrazzo installation however, terrazzo contractors and suppliers who are members of the NTMA must be considered. Working with the NTMA and your local contractor can take the mystery out of terrazzo by providing a free flow of information and knowledge based on years of experience and knowledge. Terrazzo is a product which, though centuries old, remains appropriate for use in today's design environment.