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Specifying Mosaics

A mosaic artist offers background information and guidelines for various projects.

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This "Eros and Psyche" border detail is on view at the Zeugma Museum in Gaziantep, Turkey. All photos: George Fishman (All photos except for the first two feature Fishman's work.)

By George F. Fishman

As versatile and practical now as centuries ago, the mosaic medium offers design professionals a potent means of expression to enhance projects of any scale and style. Whether the goal is to generate drama through vivid color and texture, evoke an air of formal refinement with classical motifs or conjure a touch of exoticism and sensuality, mosaic has enormous potential.

Mosaics are both a surfacing material and an artistic medium. During the design process, combining imagination with proper technical specification will produce a beautiful and enduring enhancement of walls, floors and accessories. Large manufacturers and small studios offer a

profusion of enticing panels, medallions and borders in various materials. Classical motifs are enduringly popular, but custom work opens the door to the widest creative possibilities.

As early as 9000 B.C., "proto-mosaicists" pressed stone chips into the mud floors of temple complex buildings in Göbekli Tepe, Turkey. These embedded stones formed simple but durable pavements that evolved in other locales into patterning. Over time, artisans developed increasingly sophisticated layout schemes and improved mortars that were disseminated by explorer/settlers throughout the Mediterranean basin and beyond. This work came to be called mosaic. Striking mosaic pavements and wall decorations beautified baths, grottos, palaces, temples and churches from Syria to Spain and from North Africa to Britain.



This stone pavement mosaic in Sanliurfa, Turkey, is largely intact after 1,500 years.

More recently, Art Deco, Art Nouveau and the various Revival styles all have adopted mosaics in public and private architecture across five continents.



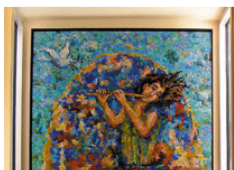
"Byzantine Fantasy" (detail) draws on the style of ecclesiastical mosaics from the 5th century A.D. It is made of traditional glass smalti with some split-faced stone and is panel mounted in a "jigsaw puzzle" arrangement and installed in a deep niche.

Established fabricators in the U.S., Mexico, Canada, Europe, China and the Middle East can "translate" designs into mesh- or face-mounted mosaics that can be shipped and installed expeditiously. Smaller projects can be undertaken by a local studio, of which there are dozens across the U.S. Selecting a local collaborator makes for a more intimate working relationship, although technology makes pre-production design modifications and progress documentation easy to achieve, even across long distances.

Design and Materials

Mosaic design generally falls into three categories: pictorial, geometric and free form. Greco-Roman mosaics often placed a realistic pictorial subject within a geometric border. This design approach still works today. Rather than copying the classical motifs, however, today's designer frequently opts to work with a mosaic artist to invent subjects that link thematically to the building's function, locale or both.

The range of mosaic materials is enormous, and growing. Mesh-mounted stone mosaics are generally sold in the same nominal 10-mm-thick (3/8-in.) size as stone tiles for easy matching to the field material. These same stones can be used to create custom mosaics for walls or floors. Polished, honed and split-faced surfaces are visually distinctive and also have practical distinctions – most notably their slip coefficient. Semi-precious stones such as onyx, agate and lapis lazuli make luscious accents and boost the palette into the brighter colors. Smooth pebbles



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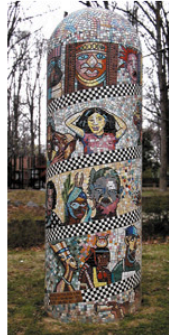
create a striking textured effect – even for pictorial subjects – in patios and gardens.

Glass for mosaics is manufactured in several forms. First is the so-called vitreous or venetian, a thin, uniform glass tile with a flat, slick surface. It is readily available in North America in a palette of several dozen colors, including metallics and iridescents. The most common size is 20x20mm (3/4 x 3/4-in.), although 10- and 25-mm sizes also are available. Vitreous glass is usually sold as face-mounted paper sheets of approximately 1 sq. ft. After thinset installation, the paper is dampened and removed.

Vitreous is the least expensive mosaic glass and is suitable for interior and exterior walls and ceilings. However, it is rather delicate and slippery; use caution before specifying it for flooring. When used for pictorial work or hand-cut borders, the glass is first soaked off the sheets by the mosaicist, then cut and assembled into the layout.



"Flutist" (detail) is made of byzantine glass and is ungrouted. The mosaic was thinset to a lightweight honeycomb panel, framed and mounted in a chapel wall niche. Natural raking light from skylight accentuates the slight texture.



"Faces of Flower Avenue" (detail) is made of unglazed porcelain and vitreous glass, with accompanying tables and benches. Mosaic sculpture can enhance a park or atrium.

Glass smalti is the traditional material of mosaic wall murals. The tesserae are thicker and more irregular than vitreous glass. They are hand cut from 10-mm-thick slabs, and their fractured faces ultimately constitute the finished surface. Hundreds of colors are available. Smalti is sold loose rather than sheet mounted. As with vitreous glass, the mosaicist either works with the direct method or face mounts the custom layout on sheets of paper or cloth prior to thinset mounting. The rich palette and rippled, lustrous surface of smalti are unique.

At least one manufacturer also makes a glass specifically for floors. These tesserae measure 12x12mms and 8mms thick and are spaced wider on the sheets than vitreous glass. "Byzantine glass" from Mexico is thicker than vitreous glass, somewhat mottled in color and hand cut, so the tesserae are less regular than vitreous but smoother than smalti.

Ceramic tile varies beyond the scope of full discussion here. Generally speaking, unglazed porcelains can be used for either walls or floors and are not too slippery. Modules of 25x25mms are available in several dozen colors, usually rubber dot-mounted at the factory. Glazed floor tiles are usually produced in larger modules that need to be cut or

shattered into appropriate sizes for making custom mosaics. Glazed wall tiles should not be used for floors; they are slippery and scratch easily.

Stock or Custom

Besides their field material and stock border motifs, some showrooms offer ready-made pictorial mosaics. Showroom professionals can coordinate colors, patterns and sizes with other surfacing elements that they sell. However, an entirely unique and personal result awaits the client or design professional that is ready for deeper involvement. By engaging a mosaicist's talent, a design can be developed collaboratively – one that harkens to historical antecedents yet incorporates the imaginative abilities of the artist.

The process is more complex than buying "off the shelf," but the greater investment can produce a greater reward. Visual motifs linked to the architecture, to local landmarks or the building's function can inspire the mosaic design, amplifying the impact of the building's interior or exterior surfaces. Freestanding mosaic sculpture can bring focus to a plaza or atrium.

Given the breadth of options, books, magazines, Internet research and travel will all help the designer prepare for the specification process, during which concept, materials, costs and schedules of fabrication and installation are sorted out.

If selection and purchase are made through a tile and stone showroom, it may be possible to arrange a one-stop deal: The showroom staff coordinates with a tile contractor, mosaic artist or both to present the options, write the order, make field measurements, fabricate and install.

Alternatively, a mosaic artist may be contracted independently. The local mosaicist may install the work as well. Usually, the mosaic is pre-assembled in the studio and then shipped to the site for installation.



"Heliconia" (glass smalti) was mosaic mounted on a cementitious panel and then shipped to the site for installation in a marble field. It is part of a South Pacific series for a hospitality setting.



"Reflectors of Fort Walton Beach, FL" is made of split stone and smalti. During installation, leveling "jacks" and screw mounting holes through the panels can be seen. Screw locations will be mapped then covered.

Evaluate proposed mosaic materials and retain reference samples. If planning custom imagery, first discuss the general goals and, ultimately, the specific motifs and placement of the mosaics. The mosaicist's portfolio and other references can help when formulating the design. Once general parameters and budget are established, the mosaicist will create preliminary sketches for review and then final working drawings. The design drawings should be to scale, indicating (in selected details) the module sizes and width of grout joints. When viewed with photos of previous work, these drawings

should accurately predict the final result.

The project budget entails thorough analysis of factors that are only listed here: 1. Size (some economies of scale may pertain, but, like typing, each tessera has to be individually placed); 2.

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Complexity of design; 3. Cost and workability of materials; 4. Pre-mounting, delivery and installation; 5. Schedule (try to avoid a "rush job"). Order extra material to allow for the cutting waste when installing fields and borders. Some materials, like handmade ceramics and natural stone, normally show considerable variation. This must be accounted for, so that all the darker material, for example, is not concentrated in one area. Alternatively, glass and ceramic mosaics – and even certain stones – are uniform in color. When planning fields and patterns, specify some mixing of similar colors to liven up the effect.

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Installation

There are 1,500-year-old mosaics that are in great condition; others fail after a few months. Why? Usually faulty installation is the cause, and it's important to avoid foreseeable hazards. Ask the installer what challenges are anticipated, and establish a plan to deal with them. Substrate preparation – solid, square, clean, flat, smooth – is always key to proper installation. As with tile, stone or wallpaper, beautiful materials can be utterly spoiled by poor installation. **TB**

DOs and DON'Ts

- Whether the installation will be done by the mosaic fabricator or a separate contractor, inspect prior projects, or at least review detailed photos of jobs similar to yours.
- Look out for fat grout lines and misalignments where sections of the mosaic were poorly joined. If they occur on your project, these will catch the eye (or foot) and be disappointing – or even hazardous.
- Be certain that the substrates are sound and free of cracks. Mosaics will not stabilize wobbly walls or floors.
- Mosaic elements themselves are stable and water resistant, but they can be dislodged if applied to materials such as drywall or wood, which soften or warp when wet. In wet areas, specify cementitious backer panels, if a solid masonry substrate is unavailable.
- Be certain that the substrates are flat and smooth. Mosaic materials – especially thin ones – will replicate the dips and bumps beneath them.
- Request the best installation materials, such as latex-fortified thinset and grout. A bad installation is demoralizing and very costly to remedy.
- A neutral grey grout is rarely wrong; avoid a high contrast or bright color, unless you want an especially dramatic effect. White, black and bright-colored grouts – like clothes – are harder to maintain.
- Discuss the choice of sanded vs. unsanded grout with the installer. Unsanded will crack in wider joints.
- Planning and communication are paramount, both in the practical and aesthetic issues. Accurate dimensions are critical; field verification while the mosaic is still in the planning stage is ideal. Otherwise, include some element of adjustability in the design. A border around a picture panel may be expanded or shrunk, for example; whereas, the picture itself cannot be.
- To ease installation, specify the same thickness of material for the mosaics as for adjacent surfacing. Otherwise, make certain the installer explains his plan to accommodate these differences.
- Begin the design phase early so that revisions can be considered calmly and unusual materials can be ordered.
- Life is short, and mosaics last a long time. Why not create something as enduring and delightful as the mosaic materials themselves?

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George F. Fishman's one-person studio is in Miami Shores, FL. He has been creating unique mosaics for homes, parks, churches and cruise ships for 20 years. He specializes in pictorial work, using a mix of stone and smalti. His work can be seen at www.georgefishmanmosaics.com. He can be contacted at gfmosaics@bellsouth.net, 305-758-1141.

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