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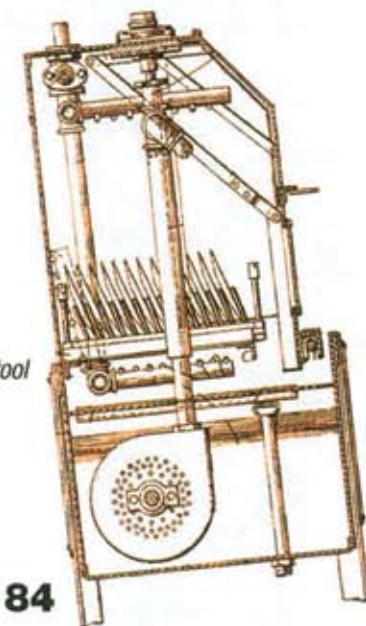
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CLUBHOUSE

DIY Hero | When simple becomes sublime

In the universe of materials used for DIY projects, you would likely classify concrete as relatively inexpensive, utilitarian and durable, maybe even humble. Most people don't think of it as high-end or artistic. But armed with the right techniques, materials and skills, you can produce spectacular concrete creations.

HANDY Art Director Mike Anderson learned that and more when he attended a workshop on forming concrete countertops with renowned designer and concrete visionary Fu-Tung Cheng in Berkeley, California. After this life-changing experience, Mike was fired up to make some concrete history. He experimented with a few prototype countertops and then created a stunning concrete vanity top for this issue (p. 30). Wanting to experience some of the excitement,



Art Director, Mike Anderson and Managing Editor, Mike Berger make a concrete vanity top.

I observed and photographed parts of the project and can attest to the contagious nature of the process. Now I'm thinking about building a concrete desk.

Mike's enthusiasm didn't surprise me because I'd had a lengthy conversation with Fu-Tung at last year's Builders' Show, where he described how his DIY roots became the foundation of a passion for concrete. As a young cash-strapped homeowner, Fu-Tung turned to concrete because it was an inexpensive, accessible material for building projects. He soon realized that he could improve his results by refining methods and materials. Since then, he's built a business that has raised the bar for architectural applications of concrete.

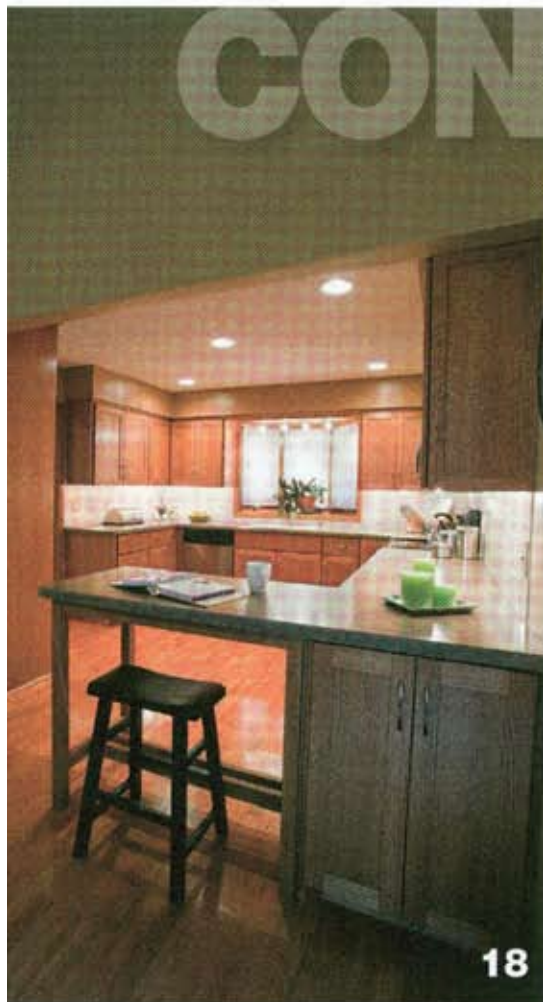
The important lesson for us is that Fu-Tung's passion and success started with creativity and a devotion to DIY projects. He is the ultimate DIYer and an inspiring role model.

Like Fu-Tung, HANDY's assistant art director, Tracy Walsh, knows what it is to long for home improvements while being cash-strapped. Sharing the DIY spirit, the HANDY editors worked with Tracy to refresh her tired-looking kitchen on a budget for this issue. Through careful planning and priority setting, we were able to make a simple facelift look like a total renovation (p. 18).

Regardless of the project you're working on, applying some of the lessons from the articles in HANDY will help you to make the most of your money, time and effort. By transforming the ordinary into something extraordinary, you too can achieve DIY-hero status.

LARRY
Larry Okrend
Executive Director
Handyman Club of America

P.S. Be sure to see p. 3 to enter HANDY's contest for an expense-paid trip to the National Hardware Show in Las Vegas.



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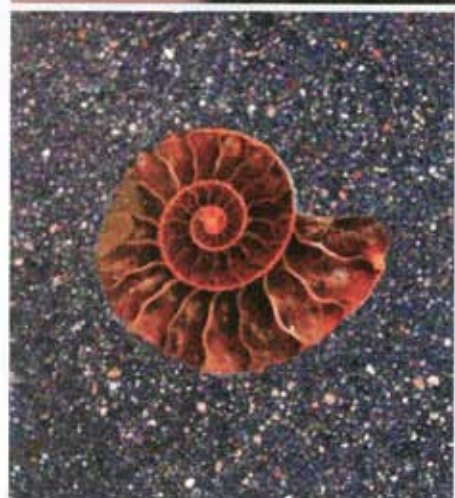


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Crafting Concrete Countertops

Making a masterpiece from a humble material

BY MIKE ANDERSON



Fabricating a countertop using concrete allows endless options for customizing with details, such as this ammonite inlay (left). The only limit is your imagination.

The Japanese term *wabi-sabi*

describes an aesthetic that is simple, rugged, and modest. It suggests a natural process. And it's the perfect description of concrete countertops, as the end product is a unique work of art.

Concrete is becoming a popular material in home remodeling, and with good reason: It's cost-effective and durable, and you can customize it to fit almost any application. Despite its rock-solid finished appearance, uncured concrete is as malleable as clay, so working with it is almost more art than craft. But don't let that intimidate you — with a little instruction, any DIYer can achieve great results using this exciting medium.

To learn more about working with concrete, I recently visited expert Fu-Tung Cheng's design studio in Berkeley, California, for in a one-day seminar on pouring concrete countertops. Fu-Tung's system for creating countertops has taken much of the guesswork out of the process. Here we show you a basic overview of his innovative approach; you can learn more about the process in his books (see "Meeting the Master," p. 34).

Making the mold

The first step in creating a countertop is building the mold. This is one of the most important parts of the process; mistakes at this stage can result in serious disappointment, so take your time and be accurate.

Start by drawing your project, including any special features (such as unusual shapes) that you want to incorporate. Once the design is complete, you can create a template of the counter using lauan plywood strips. The template provides a full-size map of the final countertop and customizes it to accommodate irregularities such as walls that aren't perfectly square.

Cut the template strips 1/2 in. shorter than the final dimensions and set them onto the cabinetry, starting with the back and front and then adding the sides. Glue the strips together with hot-melt glue. Mark the centerline, sink and faucet locations.

The template will have to be placed upside-down on a melamine mold base, so you'll need to transfer all notes and measurements to the bottom side of the template. When you flip the template, keep in mind that top is bottom, left is right, and so on.

To build the mold base, use 3/4-in. melamine cut slightly larger than your counter dimensions to accommodate the mold sides. Make sure the base is level, and screw it onto a solid work surface. Mark the outside dimensions, centerline, faucet and sink locations on the base using your template as a guide.

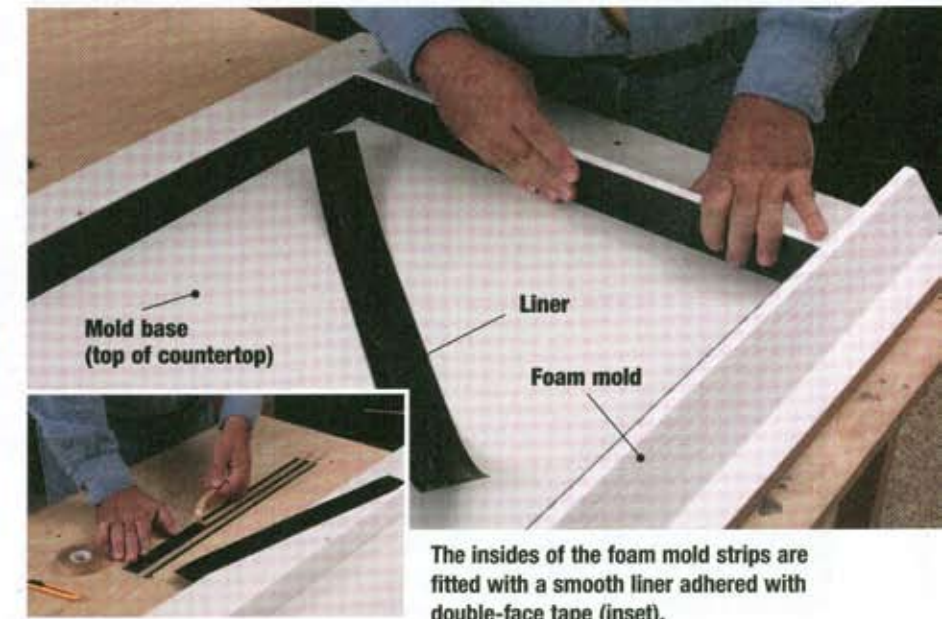
We used Cheng Concrete's Pro-form mold-making system (see SOURCES ONLINE) to create our mold. The system consists of Styrofoam strips that are adhered to the mold base with double-sided fiberglass tape and then fitted with a special liner that gives the sides of the countertop a smooth finish. The kit is available in 2- and 2-1/2-in. depths.

Seal all corners and edges with black silicone caulk, which creates a rounded edge. Be careful with the caulking, as imperfections will telegraph into the poured counter.

Knockouts are mold parts that create holes in the counter for plumbing. Use the templates that came with



To create an accurate mold for your countertop, use a template made to fit your base cabinet.



The insides of the foam mold strips are fitted with a smooth liner adhered with double-face tape (inset).

BUILDING THE MOLD



Fossilized ammonite

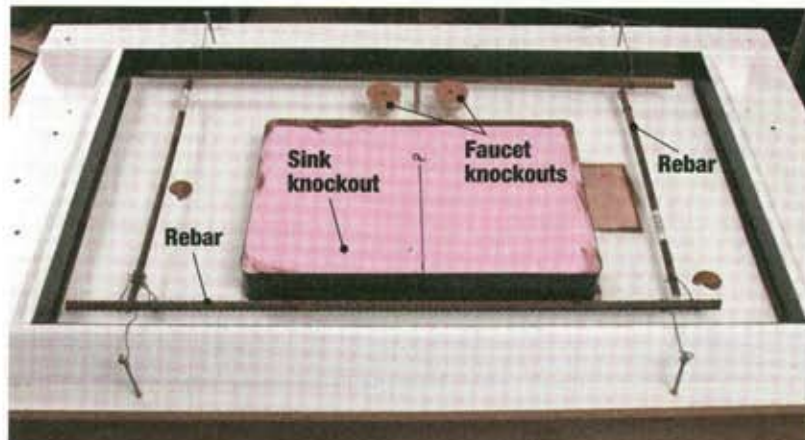


Use painter's tape to protect the liner from excess silicone caulk. Caulking produces a rounded finish on the countertop edge. Take your time and be as precise as possible.



Knockouts

Sink and plumbing knockouts are fastened to the mold base with silicone caulk and screws. To adhere inlays, spread a thin coating of silicone on the top side with a razor blade (inset).



For strength, rebar is added, with screws and wire to support it. The rebar should be at least 1 in. from the bottom of the mold base. The mold is upside down, so the mold base will create the finished surface of the countertop.



After putting concrete and admixtures into the mixer, cover the opening with plastic (inset) and run the mixer for five minutes before adding water.

your sink and faucet to create the knockouts. Cut the sink knockout from 2-in. (or 2-1/2-in., depending on the depth of your countertop) dense-foam insulation and then attach the Pro-form liner to the sides, keeping any seams toward the front of the mold. For the faucet plumbing, build mushroom-shape knockouts by cutting two 2-in.-dia. circles out of 3/4-in. plywood with a hole saw; then attach the cutouts to 1-1/4-in. lengths of 1-in. dowel. This creates a 3/4-in. countersunk hole in the underside of the countertop that will accommodate the faucet's mounting nuts.

Concrete is strong in compression, but not in tension. Rebar is used to give concrete flexible strength and to keep it from cracking under loads. Support the rebar within the mold using wire tied to screws positioned just outside of the mold. You can also add wire mesh tied to the rebar for more reinforcement.

Finally, you can add inlays or aggregates to the mold. Use your imagination — fossils, shells, coins, metals, tile and glass are just a few choices for inlays.

When adding inlays to the mold, apply a thin layer of silicone to the visible surface of each inlay. This will secure the inlays to the mold and prevent them from becoming lost in the concrete mix during pouring and vibration. Keep the layer of silicone thin so that the inlay will not end up lower than the surrounding surface. If you are adding aggregates to the mold,

MIXING AND POURING



The consistency of the mix should be like runny oatmeal (left). You can perform a "slump" test using a 16-oz. cup with a 1/4-in. hole bored in the bottom. Fill and pack the cup with the mix; then carefully turn it over, lifting smoothly (inset). The slump is the vertical distance the concrete settles, which should be no more than half the height of the cup. When the mix is ready, use buckets to pour it into the mold; then carefully push the mix into the corners with your hands (right).



When the mold is half full, start vibrating the mix with a handheld vibrator just below the surface (left). Continue filling the mold, and vibrate again. Screed off any excess concrete (right); then trowel smooth (inset).



lightly spray the bottom of the mold with an adhesive to help the aggregates remain at the surface. Add more aggregates than you think you will want to see, as some will become lost in the mix during vibration.

At last the mold is complete. Check your work for any flaws, and carefully vacuum the mold to clean out any debris.

Mixing it up

To determine the amount of concrete you will need, multiply the countertop's length by width by depth to find the total cubic inches; then divide by 1,728 to find cubic feet. (A typical 80-pound bag of concrete yields 0.60 cu ft.) Use this number to also figure the amount of admixtures required for the concrete.

The kind of concrete you use is very important. (Do not use air-entrained

concrete.) Developed during the 1930s to enhance resistance to freezing and thawing, air-entrained concrete contains billions of microscopic air cells, which relieve pressure from water as it freezes. However, these air bubbles can create small voids in the countertop surface. It may be a challenge to find concrete that is not air-entrained; we had to special order a supply from a local hardware store.

Admixtures can help to eliminate air bubbles as well as add strength and color to the concrete mix. Plasticizers reduce the amount of water necessary for mixing concrete and improve its workability. Less water is better when mixing concrete — too much can weaken it. Other additives include nylon fibers, which improve strength and reduce hairline cracks, and pigments, which add color. Premeasured admixtures that



Cover the concrete for about four days to retain moisture. The ideal curing temperature is 75 degrees with at least 25 percent humidity. After removing the concrete from the mold, allow it to cure for an additional two to three days.

include pigment, water reducers and strength-enhancing fibers make mixing concrete easier.

Once you've prepared the concrete and admixtures, gather your tools and get ready to pour. You'll need a