

Building With Quartz

It's not just for watches anymore

by Mike Berger



Thanks to modern processes, you can enjoy the timeless elegance — and extreme durability — of quartz throughout your home.

Quartz is one of the most abundant substances on the planet. Used since the early 1970s to drive watches, quartz glitters like a diamond, resists extremes of heat and pressure and is harder than almost anything on Earth. Imagine incorporating that sparkle and extreme durability into a building material that can be used on almost any horizontal or vertical surface. Natural quartz surfacing makes that vision a reality.

Used for countertops, vanities, shower surrounds and flooring, quartz combines the durability of stone with the maintenance-free properties of modern polymers. To unlock the secrets of this unique building material, we worked with Silestone by Cosentino, the largest manufacturer of natural quartz surfaces. And just as with raw quartz, we found that the usefulness of its modern cousin goes far beyond its visual appeal.

What is quartz surfacing?

Quartz surfaces have been around for decades, though the product has only recently gained popularity in the United States. Originally developed as BretonStone about 45 years ago, all quartz surfacing is manufactured in basically the same way — Breton sold the process to other manufacturers such as Cosentino, DuPont, Cambria and CaesarStone.

Quartz surfacing is made from raw quartz crystals. After being mined, the quartz is separated according to size and type, inspected for quality and stored. At the time of production, the quartz and a very small amount of resin and color pigment are mixed until thoroughly combined and then poured into a large tray with a paper liner. In those instances where two or more colors or types of aggregate are combined to make a color,

they are mixed separately with the resin and pigment and combined just before pouring into the mold.

Once the mold is filled, it is moved to the vibrocompaction area, where massive presses squeeze the material to roughly half its original thickness. At the same time, a vacuum is applied and the mold vibrated to evacuate the air. Curing is further accelerated by moving the mold with its compressed load into an oven, where it is baked at 100 degrees Celsius for almost half an hour. Then it enters a special chamber where it is air-cooled to room temperature. When it reaches ambient temperature, the product is fully cured and ready for calibration (thickening) and polishing.

Because of its unique manufacturing process, quartz surfacing possesses qualities not found in other natural, engineered or synthetic materials.

PHOTOS BY SCOTT JACOBSON AND COURTESY COSENTINO



After a process of vacuum forming and vibration, compacted slabs of ground quartz and resins are cured at a high temperature to create strong yet flexible sheets of engineered material.

Its properties include:

- **Scratch-resistance** — Only diamond, sapphire and topaz can scratch quartz; kitchen knives can't harm it.
- **Stain-resistance** — Quartz surfaces are nonporous and resistant to stains from spills such as coffee, wine, lemon juice and ink.
- **Strength** — Compared with granite, quartz surfaces have four times the ability to flex without fracturing, making them less prone to cracking or chipping.
- **Ease of maintenance** — Quartz surfaces do not need the regular sealing that most other stone surfaces require.
- **Heat and scorch-resistance** — Unlike solid surfaces and laminates, quartz surfaces can withstand limited exposure



Quartz surfacing can't be scratched by average kitchen knives, nor can it be stained by acidic substances such as lemon juice or coffee.

to heat without burning or scorching.

Despite these advantages, quartz surfacing does have limitations and may not be right for every installation. For example, quartz is heavy — it can weigh as much as 16 pounds a square foot — so extra bracing may be required to support the weight of the panels. When you place an order, an authorized dealer will verify whether the area where you plan to install the material will tolerate the load.

Quartz surfacing can also be expensive. For example, Silestone costs \$35-\$94 a square foot installed, and DuPont's Zodiac products can run as much as \$100 a square foot. When compared with granite, which averages \$55-\$95 a square foot, solid surfaces (such as Corian and



Silestone's ready-to-install vanity tops bring quartz surfacing into the DIY realm.



Quartz surfaces are available in a wide variety of colors and patterns. Some styles offer small grains of quartz; others use larger, highly reflective pieces to create interesting effects.

Avonite), which cost \$35-\$85 a square foot, and laminate surfaces (such as Formica), which cost \$5-\$30 a square foot, engineered quartz can seem cost-prohibitive. But when you consider the benefits, the expense may become easier for you to justify.

Stone of many uses

Because of its hardness, strength and resistance to heat and staining, the most obvious use for quartz surfacing is for kitchen countertops. Slips of the chef's knife won't scratch the surface, hot pots won't mar the finish, and the material will never need sealing or maintenance (except for regular cleaning with soap and water).



Quartz surfacing can be used for wallcoverings, tabletops, shower surrounds or even flooring, as shown by this staircase.

TYPICAL QUARTZ INSTALLATION



The first step in a typical installation (a shower surround is installed here) is to make cardboard templates of the areas so that the panels can be cut to rough size at the factory.



Installers make the final cuts on site to ensure a tight fit. Diamond-coated blades are necessary to cut through the hard quartz.



A special adhesive is applied to the backs of the panels; then they're pressed into place and braced in position while the adhesive cures.



After all of the panels are installed, color-matched caulk is applied at all joints. The result is a watertight installation that requires very little maintenance.

Beyond the kitchen, the unique properties of quartz surfacing make it a suitable alternative for unconventional applications where stone would be impractical (or impossible) to use. Shower walls, floors and fixtures, tub surrounds, tabletops, fireplace surrounds and even entire room floors can be crafted from quartz.

Natural quartz surfacing is usually installed by trained dealers because it's so heavy and requires special cutting tools, but it's slowly entering the DIY arena. For example, Silestone products include ready-to-install vanity tops as well as a series of backsplashes perfect for DIY applications.

How it's installed

When you order a quartz surfacing product, an installer will come to your home, verify that the substructure can adequately support the product and then make cardboard templates of the necessary panels (see "Typical Quartz Installation," p. 25). The factory will use the templates to cut panels to approximate size, and when the product is delivered, the installer will trim them to ensure a tight fit.

Special construction adhesive is used to secure the quartz panels, and if necessary, wood braces hold the panels in place as the adhesive cures. Finally, color-matched caulk is applied at all the joints to ensure a watertight installation.

Although quartz requires very little care, you'll want to wash the surfaces with a mild soap and water after installation to remove any dust left behind from the trimming process. After that, all it will need is an occasional soap-and-water washing. In fact, the hardest part about caring for natural quartz surfacing will be tearing your gaze away from the deep, glittering appearance of the semi-precious stone. ♦

WHAT IS QUARTZ?

Quartz is the most common mineral on Earth and is found in nearly every geological environment in almost every type of rock. Larger quartz crystalline structures include amethyst, citrine, rose quartz and smoky quartz. Smaller crystalline quartz structures can be found in such formations as chert, chalcedony, agates, onyx, carnelian, flint, jasper and bloodstone.

Quartz is extremely durable and rates a 7 on the Mohs scale (a measure of hardness developed by German mineralogist Frederich Mohs in 1812). In fact, the only mineral families harder than quartz are topaz, corundum (sapphires and rubies) and diamond. — MB



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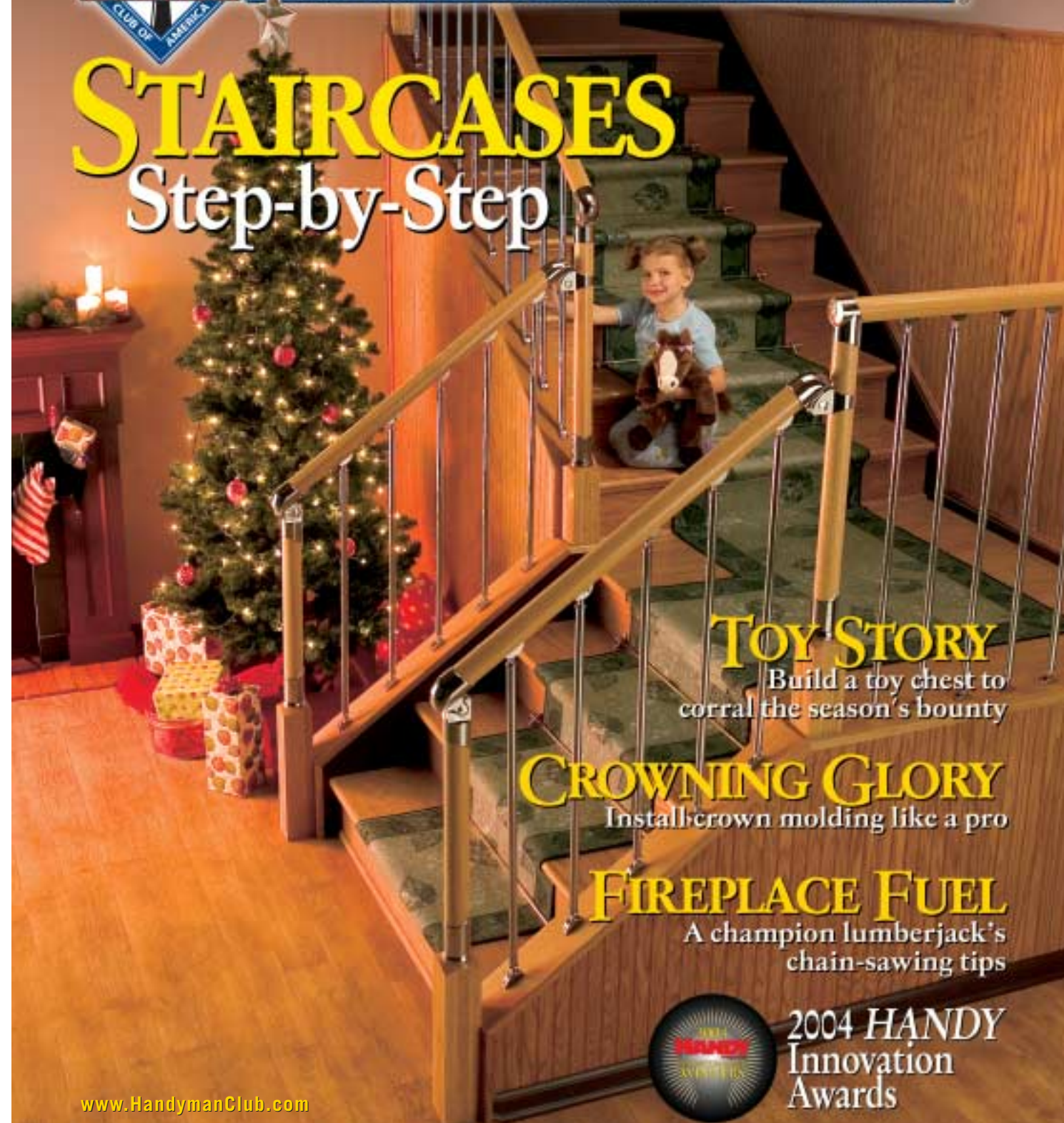
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