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### Information about Stone and Stainless Steel Countertops

**S**tone Stone slabs used for countertops developed their color and pattern over millions of years of natural formation creating a surface that is truly unique. Choosing a natural stone is a personal decision based primarily on your tastes. The type you choose depends on where and how the stone will be used - kitchen countertops,

bathroom vanity, dog washing sink or art studio sink- your interest in maintainance, your cooking style, and your budget. While granite, marble, slate and soapstone are all beautiful, some are better suited than others for particular uses and households.

Some stone is more environmentally sustainable than others. Soapstone, slate and “Virginia Mist” granite are quarried locally, but these stone types are also available from quarries from Italy to Brazil. Using them involves shipping long distances and is sometimes quarried in abusive conditions as opposed to using a stone close by that provides local jobs. I suggest you inquire about the provenance of your stone.

For those who are chemically sensitive or designing a toxin-free home, stone is a good choice because it is a natural material that is minimally processed.

The backsplash is an important element to most stone countertop installations unless you plan to run ceramic tile all the way down to the countertop, which should be installed after the countertop. A backsplash performs a vital role as a splash-guard to the back wall, particularly around the stove area, and keeps water from leaking behind the cabinetry. It is also an invaluable ‘mask’ – hiding the gaps where a straight counter meets with a less-than-straight wall (as is typically in most older houses).

Undermount sinks are the best choice with a stone countertop because the cut edge of the stone will be visible. Cleaning around an undermount sink is easier than around the lip of a drop-in sink. Something I consider crucial in a kitchen is an integral drainboard so that the invariably unsightly dish drainer can be dispensed with. A drainboard can be fabricated into the stone by cutting shallow grooves with bottoms that slope down into an undermount sink.

Stone slabs butt together tightly. Joint edges are left sharp for a nearly seamless transition. In measuring, no allowance should be made for joints. In installation, only a small bead of silicone should be applied between pieces. All silicone that beads to the top should be wiped away.

**Soapstone Countertops** You may have first encountered a soapstone countertop during your high school chemistry class, where soapstone is routinely used because of its high resistance to staining. Soapstone has recently become more popular with homeowners wanting a natural stone with a different look than the more common granite and marble. Soapstone is essentially compressed talc, very soft to the touch, dense, and non-porous, making it impervious to heat and staining, yet it is also soft enough to be cut into any size or shape. It can also be carved.

Soapstone has a limited color range and depending on where it is quarried, the colors and qualities will vary somewhat. Typically untreated soapstone is a light blue-gray or gray-green stone.

Soapstone is quarried locally by Alberene Soapstone at <http://soapstoneventures.com>. Other varieties from Brazil or Scandinavia display dramatic and interesting white veining like marble, or faint wavy patterns with movement like granite. Some is speckled, or flecked with mica. The more solid colored stones have more mineral content, and are harder and resist scratching more than the veined stones. The veined soapstones, though, are still fine for counter tops and sinks, but just know they are a little less durable.

Spill anything on a soapstone counter top without worry. Since it is *non*-porous, it won't stain. It's heat resistant and, like granite, you can set your hot pots right on the surface without damage, but this is not recommended. Grit or hard particles trapped under the pot could scratch the surface and once the hot pot is moved the countertop may be hot enough to burn you.

Although dense and resistant to staining, soapstone counter tops are softer than granite or marble so are prone to nicks and scratches. Most scratches can be easily sanded away. As with any other countertop material, it is best to use coasters, cutting boards and trivets. Never cut directly on any stone countertop; doing so will dull your knives

Mineral oil is often routinely applied to a soapstone counter top to darken its color and keep it looking great or you can apply a sealer that will give you that dark shine. The mineral oil will darken the color from its original cloudy blue-gray to black. The mineral oil eventually evaporates and re-application is necessary to maintain the "wet" look. Some people don't use oil or a sealer-neither is necessary-and let the stone darken and age naturally over time.

If you do this, you should know that areas which receive the most hand contact (around edges, sinks, the cooktop and primary food prep area) will darken more quickly due to oils in your skin. No matter what you do, a heavy-duty sanding will return the soapstone to its original state.

## Soapstone Sinks

Soapstone is extremely versatile and durable and has been used for centuries around the world to fashion fireplaces, tools, carafes, vases and sinks. You may remember seeing one in your high school chemistry class where soapstone sinks and counter tops are commonly used for their excellent resistance to heat, chemicals and staining. A soapstone sink looks and feels great and lasts forever. Dishes will break more easily if dropped into a stone sink vs. a stainless steel sink.

In colonial America soapstone sinks were very common. Several popular styles developed such as the “*Boston-Williams*” which is a rectangular single-bowl sink and the “*New England Double-bowl*” featuring two equal size sinks. You can buy these and other pre-made styles from several suppliers around the US or you can have a sink custom made.

You can get a notched front, sloping farm-style front, built-in backsplash, single-bowl, double-bowl, off-set bowls, or round or a “block” sink cut out of a thick chunk and installed as one huge piece.

Soap and water will work just fine. Using a spray de-greaser will not damage the sink in any way, but it will remove any mineral oil faster requiring more frequent applications.

A soapstone sink is generally more (sometimes *waaay* more) expensive than a similar sized stainless steel or ceramic sink. For a kitchen sink, expect to pay between \$350 for a basic single bowl up to \$2000 for more elaborate designs.

Also adding to the overall cost are the extra modifications necessary during installation. Soapstone is *heavy* so additional bracing is needed. Existing plumbing may need changing since the overall size is much larger and specialty cabinets may be required depending on the design of your sink.

## Granite Countertops

Granite is the most popular natural stone and countertop material. It is also more hygienic (tied with quartz) than all other surfaces. Aesbestos has recently been found in very rare cases in particular types, so it's best to be aware of the provenance of your stone and check for that problem with the stone supplier.

One of the hardest and strongest materials in nature, granite originated from the earth's core as liquid magma. Extreme heat and pressure forged the quartz, mica, feldspar and other minerals into a very dense structure millions of years ago. Over time, additional heat and pressure resulted in the myriad, fascinating combinations of color and pattern that becomes visible when the stone is polished.

A granite counter top is nearly impossible to scratch, hot pots won't hurt it, bacteria and stains are not a problem under normal use and proper cleaning. Most granite is naturally porous to a certain degree and thus *susceptible* to staining, however granite countertop care is hardly a concern. Furthermore, there are several varieties of granite (especially blacks) that are so dense they simply will not stain and thus do not ever need sealing.

Colors include many choices in golden browns, pale pinks, deep plums, romantic reds, exotic blues, greens, blacks and many subtle shades in-between. Surface patterns typically will have a flecked or pebbled appearance which can vary in size and shape and in the density of the pattern depending on the particular mix of quartz, crystals and minerals that make up the stone. The pattern can be highly structured offering a uniform appearance over the entire countertop or the pattern may change continually, without repetition, called “*movement*”. Movement is often desired for the organic and dramatic look it adds to your kitchen or bathroom design. You also have the texture or finish of your granite counter tops to consider. The most popular is a polished surface, but granite counter top finishes also include honed, flamed and brushed.

Slabs for your granite counter top are cut from monolithic blocks and come in thicknesses of 2cm (3/4 inch) or 3cm (1 1/4 inch) or custom sizes. The 2cm is most commonly used and generally less expensive, but the 3cm is becoming more popular. It really just depends on the look you’re trying to create especially concerning the edges and your kitchen cabinets. A thicker slab gives you more options when choosing your edge profile/style.

A granite tile countertop is an option that will save money (up to 60%) while still providing the distinct look and desirable qualities of a full-slab countertop save the grout maintenance and the fact that you won’t have a continuous surface. However, grout joints can be minimized because of the precise shape of granite tiles.

## Marble Countertops

The tones of the marble color palette are plentiful, encompassing creamy whites and neutrals, yellows, oranges, ocean greens and blacks. Some types have more dramatic veining than others. If using marble on floors and walls, choose a similar pattern/material and color shade on your floors and walls to avoid a chaotic look. Marble is available in 2 cm and 3 cm slabs as well as the full range of tile sizes from 1-inch mosaic tile up to large 24-inch tile.

Marble is a crystalized limestone and therefore can be polished to a mirror-finish. However, marble polishing is only recommended for counter tops that are lightly used such as a powder bath, tabletop, pass bar or furniture piece, but NOT for kitchen countertops or the wet bar. Marble is made of calcium carbonate, which is reactive with acids (fruit juice, soda, coffee, alcohol, salad dressing, etc.) and will “etch” upon contact with acids. Etching destroys the polish leaving a dull, light spot. You’ll get these dull spots all over with marble in the kitchen. Also, marble is softer and more prone to scratching than granite.

Polished marble *is* very stain resistant, but still not good for kitchens due to etching. Sealing does not prevent etching. One exception to the rule above is if you are a serious baker. Marble is best for rolling out pastry dough. The ingredients in dough are non-reactive with the stone

If you love the *look* of marble countertops and want to use it in your kitchen, choose the honed finish and always use coasters, cutting boards and trivets to protect against scratches. Marble is traditionally left to age naturally, gaining a patina of stains and all. Over the years the marble will absorb stains, the patina will change and the stone will begin to reflect the essential character

of your home. This is especially true of marble tile floors, which become more beautiful with age and use.

**Slate Countertops** Slate is a fine-grained metamorphic rock that is derived from sediments of clay and fine silt. The action of intense heat and pressure changes the original clay into new minerals such as mica, chlorite, and quartz. These natural processes transform the clay into slate. Slates can usually vary in composition, structure, and durability due to the alteration of the minerals being rather inconsistent.

This natural process of slate formation has provided this material with certain properties that help to make slate an excellent choice as a kitchen countertop material. It is a natural material that is known for strength and durability, like that found in granite or marble. Slate kitchen countertops have a low porosity so that the surface requires no sealing, is acid resistant and unlikely to provide a breeding ground for bacteria.. Most slate countertops are considered to be stain-free. Slate is also heat resistant.

Slate countertops are low maintenance and can be kept clean with any household cleaner. To keep slate kitchen countertops protected the use of mineral oil is usually recommended, but some find it attracts dirt. Clean it like you would any other counter surface, with dish-washing detergent or a grease cutting agent such as Fantastic. Scratches are easily rubbed out. No chemicals are used in production.

The color of slate can vary from black to dark blue to green, and sometimes iron deposits give a brownish red color to areas of the stone. The honed finish, machined smooth with fine diamonds, has an extremely smooth, eggshell finish. Slate is not a glossy material.

Counter tops are generally 1 1/4" to 1 1/2". Slate can be produced any thickness desired within the limitations of the stone and is often used in thicker pieces for stair treads and thresholds. Classic slate edge detailing is a honed, eased edge. It is a relatively square edge with the "arris" or sharpness taken off at the top and bottom. This edge profile suits slate stylistically and from a performance standpoint. It is also the most economical. However, other edge profiles are available.

**Stainless Steel Countertops** Stainless steel is an alloy of steel, nickel, and at least 10.5 percent chromium. Because of the impacts of mining, particularly those associated with chromium mining, and the energy used to produce it, stainless steel is not inherently a green material. However, stainless steel typically contains 65 to 80 percent recycled content—up to 100 percent is available—and it's fully recyclable.

Recycling steel uses a fraction of the energy required to produce it from virgin sources. Reclaimed stainless steel sheeting and fixtures are sometimes available from waste exchanges and specialty dealers.

Stainless steel countertops offer very high durability and low maintenance and do not off-gas. They scratch easily and show fingerprints, but if stainless steel is sanded to a brushed finish, it helps hide prints. Scratches can be reconditioned in place if they are shallow, though the nicks and marks of daily use give stainless steel a nice patina over time. Leaving extremely hot pots on stainless steel may mar it.

Stainless steel countertops are rated for food preparation, antibacterial, and easy to clean. Different grades of stainless are used for different applications. For better stain resistance, for example, residential stainless-steel countertops should be fabricated with 304 stainless steel, which has higher nickel content than lower-grade stainless steels and is typically used for food preparation areas.

A 16-gauge stainless steel is generally used for residential countertops while 14 and 12-gauge are for industrial uses. Countertops of almost any size can be created in stainless steel, which is a rolled metal product. It can, and should be, welded, ground, and polished. Soldered joints are not safe for food-preparation areas. The welded joints, if done properly, will be barely visible on the surface of the countertop.

Despite the name, stainless-steel countertops can stain and become corroded. Household cleaning products that contain chlorides—such as bleach—will harm the countertop unless you can quickly and thoroughly rinse it off with clean water. Acidic foods left on stainless steel for long periods will stain the surface. For surface stains, use a cleanser such as Comet and scour in the same direction as the finish.

For general maintenance, clean a stainless-steel countertop with warm water and soap using a sponge or soft cloth. Rinse thoroughly with water and wipe dry to eliminate the possibility of water stains.

Stainless steel countertops can be brushed to create surface patterns for added character and to camouflage scratches and wear. Stainless-steel countertops are resilient, but they will age over time. General use causes minor scratches as objects slide, rub, or get dropped on them.

Deep scratches or dents may be nearly impossible to remove, but surface scratches can be blended in by using a commercial-grade abrasive pad. A 180-grit pad or higher is a safe start. The main rule is to stroke or move the pad in the same direction as the existing grain. While blending in a scratch, you may create an area that looks different from the rest of the countertop. A light, feathering stroke will tone down changes. Another option is to hand polish the entire countertop for a blended finish. Deeper marks require a more aggressive abrasive pad or a backer on the pad for more pressure. Fabricators can usually recommend a good source.

There are also finishes available that can mask or camouflage scratches. A random orbital finish with varying grits creates a refined, light grey, contemporary swirl and eliminates worry about scratches.

Stainless-steel countertops can include a variety of popular edges as well as backsplashes. Embossed or patterned backsplashes have seen new popularity. Homeowners are also mixing and

matching with stainless steel, having perhaps one countertop or just the sink in stainless steel and other countertops in other surfaces. Sinks and drainboards can be fabricated integral with the countertop.

For those who are chemically sensitive or designing a toxin-free home, stainless steel is a good choice.