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DURASTONE® UN-GLAZED SURFACE NON-STAIN QUALITY

Vitrified Tiles are generally made by the dust pressed method of a composition (about 60% silica & 40% clay along with other raw materials) resulting in a tile that is dense, impervious, hard, strong, and frost resistant. These are fully vitrified tiles, fired at more than 1250 °C, having water absorption less than or equal to 0.07% (ISO 10545/3)

Even with such good low water absorption, any unglazed tile is left with a surface with a very distinctive matt, but also still porous appearance.

Past results and end user comments have shown that this minimal percentage of porosity is still subject to some marking and dirt contamination, generally it is accepted that by having an untreated surface any unglazed tiles will have some superficial porosity. Until this surface has fully aged (superficial wear) it will require a stricter cleaning regime which is also accentuated by the colour of the tiles selected and installation location. Usually, light colour tiles shows marking, while the dark tiles shows stains. Nevertheless, all ordinary stains can be removed from a porcelain tile.

The use of most dedicated non enhancing Porcelain Tile sealer available in the market will assist in making these tiles easier to clean. For these products we recommend for you to contact your local consumables supplier in your area.

ROUTINE MAINTENANCE
General maintenance and cleaning of porcelain tile varies depending on the surface texture and soil load. General cleaning should be performed with a neutral cleaner diluted to the manufacturer's recommendations. Non-oil, non-acidic, and non-soap base cleaners should be used. Porcelain tile has a dense, low absorptive body that inhibits the penetration of contaminants, harsh cleaners and aggressive scrubbing will not harm the tile. The grout joints, however, may be adversely affected by harsh cleaners and aggressive scrubbing. These could become weak and discoloured over time. Test all cleaning materials and techniques in an inconspicuous area whenever you are selecting or changing your cleaning materials.

If the cleaning agent does not affect the appearance of the installation, please follow these procedures. Frequency and duration of the maintenance procedure will depend entirely on the soil load.
There are four steps that are critical and should always be remembered for the successful maintenance of porcelain tiles:
1) All spills should be cleaned up as quickly as possible.
2) Use only the recommended dilution of neutral detergent. More is not always better; the higher concentration of detergent in the cleaning solution will only make it more difficult to rinse. If the floor is exposed to excessive spills, large amounts of traffic, or if the floor is textured, a stronger cleaning agent may be necessary. These stronger cleaning agents should be on the alkaline side of the pH scale and generally have a pH of 9 or higher in the concentrated form. Follow the manufacturer's recommendation at all times when using these products.
3) Allow the proper dwell (remain on the floor) time. The detergent solution must be given time to act on the soil load. Generally five to ten minutes is sufficient.
4) Rinse thoroughly with clean, clear water to remove the dirty detergent solution and emulsified soil. Rinsing is a critical step in the maintenance procedure. If dirty detergent solution is not removed and is allowed to dry on the surface, a coating will form which is very difficult to remove.

pental
GRANITE & MARBLE

MATERIALS

Best Uses, Care, and Creation

Silica-based Stones

GRANITE - Some stones considered granite by the stone industry are not granite by geological definition; for example, most veined granites are technically 'gneiss' (pronounced "nice"). Within the industry, performance generally dictates the description more than origin.

Common uses: Residential and commercial countertops, fireplace faces, commercial flooring, and exterior cladding.

Care: Sealing granite is recommended. Number of coats will depend on the density of the particular stone. Granite is not acid sensitive, is very hard and durable, and very heat resistant (some more than others). Honed or satin granite, if sealed properly, has no significant difference in maintenance or performance from polished.

Creation: Homogeneous movement (true granite): Intrusive igneous rock formed from cooling and solidification of molten magma. It is comprised primarily of mica, feldspar, and quartz. The slower the stone cools, the larger the mineral crystals within it become.

Veined movement (gneiss): Metamorphic stone composed of granite or a silica based-sedimentary stone. When the original (protolith) stone is subjected to temperatures greater than 150° C and pressure, it undergoes a physical and/or chemical change resulting in gneiss. Similar minerals band together, forming veins.

Finishes: Polishing uses a 20 head polishing line. Honed only goes to 13th head, slower speed. When creating satin or brushed slabs, stone is honed and then diamond-tipped wire bristle brush is used. Bristles erode softer parts of the stone, leaving only the hardest parts and creating a slight texture.

Other notes: Most stones are honed and then coated with a resin that is cured at a high heat. This is to fill any micro-fractures in the slabs. At that point, the slabs are polished. The polishing process should remove the resin from the face of the slab, leaving it only in any micro-fractures. All resin used must comply with FDA rules for food contact, assuring food prep safety. Granite is generally between 6 and 8 on the Mohs hardness scale.

QUARTZITE -

Common uses: Residential countertops, shower walls, cladding, floors.

Care: Sealing is recommended. Quartzite is quite heat resistant, generally not acid sensitive and generally very hard. Honed or satin quartzite, if sealed properly, has no difference in maintenance or performance.

Creation: Metamorphic stone composed of quartz sandstone. Quartzite is compressed until it does not show crystal structure.

Finishes: Most commonly available in polished, but may sometimes be available in honed or satin.

Other notes: Quartzite can sometimes look like a calcium carbonate-based stone but has much easier care, making it highly desirable to many people. Many quartzites contain other minerals that may affect their performance, such as acid sensitivity or hardness.

SANDSTONE -

Common uses: Residential or commercial countertops in dry areas, fireplace faces, cladding.

Care: Sealing is recommended. True sandstone is not acid sensitive. Very large particles allow moisture to move through, making this not a good stone choice for wet applications. Softer sandstones can show wear patterns when installed on floors. Sometimes, moisture from thinset will darken tile after installation. In that case, sealing should wait until the tile is completely dry.

Creation: Sedimentary stone composed of particles 1/16mm to 2mm in size. These particles are then compressed. Quartz sandstone is the most common, often coming from beach sand. As granite breaks down, it becomes quartz crystals that can become sandstone.

Finishes: Generally only available in honed slabs. Sometimes available in antiqued in tile or cladding. Certain sandstone tiles can be found in polished, though the polished finish may wear off in floor applications.

SCHIST -

Common uses: Residential countertops.

Care: Sealing is recommended. Schist is heat resistant and most are not acid sensitive. It is often foliated, meaning that it's formed in layers and grains of minerals can flake away. Thus, though generally hard, it can be sensitive to impact and sometimes somewhat more difficult to fabricate. Honed or satin schist, if sealed properly, has no difference in maintenance or performance.

Creation: Metamorphic stone most commonly composed of quartz.

Finishes: Most commonly available in polished or satin.

SLATE -

Common uses: Hearths, fireplace faces, floors.

Care: Sealing is recommended. Not acid sensitive. Heat resistant. Slate is sometimes enhanced to bring out the color. Slate is a relatively soft stone, so it is not recommended for areas where impact or cutting on the surface may occur. When softer slates are installed in the natural cleft finish, small pieces may come off when sweeping or mopping shortly after install.

Creation: Very fine grained metamorphic stone composed of shale or siltstone. It commonly exhibits layering and usually splits easily.

Finishes: Most commonly available in natural cleft or honed.

Other notes: Slate is often available in tile and is frequently referred to as gauged or semi-gauged. This refers to the material being planed down to a consistent thickness. However, some slate will still lose layers, typically prior to install.

SOAPSTONE -

Common uses: Residential countertops.

Care: Very acid and heat resistant. Generally much softer than granite and can be scratched, but scratches can often be buffed out. Sealing or treating the surface is recommended, but the method will vary by the material. Depending on the density and mineral content, soapstone will either be treated with a mineral oil or a soapstone enhancer wax (Original PA, Silver Soapstone, Barocca, Beleza, Grigio Santi) or a standard sealer (Green Iron).

Creation: Soapstone is a metamorphic stone created by heat and pressure applied to minerals such as peridonites, dunites, and serpentines. Often, a soapstone quarry will have a high quantity of talc at the top and may be accompanied by serpentine.

Finishes: Most commonly available in honed or satin.

Other Notes: The hardest soapstone slabs are low talc and will often have a green tone (Architectural Soapstone). Very light or solid grey soapstone colors (Artistic Soapstone) are generally the softest and most easily scratched; for that reason, we do not stock this.

Soapstones such as Original PA are impervious and it's not necessary to treat the surface. However, the stone will oxidize and darken in higher use areas, so mineral oil is usually applied to give it a uniform appearance. Sometimes Pietra Del Cardosa is referred to as a soapstone, however it is actaully sandstone. While it can look similar to soapstone, it is formed differently and can be acid sensitive.

BASALT -

Common uses: Interior and exterior residential countertops, shower walls, floors, fireplace faces, tub decks.

Care: Basalt is a rather durable stone. It is heat and acid resistant and is relatively hard and resistant to scratching. It is somewhat porous and may require multiple coats of sealer upon installation as well as resealing on a more frequent basis. It can be enhanced prior to sealing to darken it slightly, though it may take several coats of enhancer.

Creation: Basalt is formed from lava, which cools and goes through a process of crystallization and hardening. Because it's formed at the earth's surface, the lava cools quickly, giving the stone a structure made up of small crystals (fine-grained).

Finishes: Most commonly available in a honed finish. Basalts tend to have small holes which, depending on the size, may be filled or unfilled at the factory. Although the stone is resistant to acids and the elements (UV, freeze/thaw, etc), the fill may not be.

Calcium Carbonate-based Stones

MARBLE -

Common uses: Because marble is softer and more sensitive to acids than granite, many people opt to use it for areas such as bathroom vanities, residential flooring, shower walls, backsplashes, and architectural details. White marbles such as Calacatta, Carrara, or Danby are more durable and are often used in kitchen countertops.

Care: Marble should be sealed. Care should be taken to keep acids off marble, as they will etch the surface. Sealing will help the stone resist staining, but will not prevent etching. Marble can be scratched by steel. Generally, white marble such as Calacatta, Carrara, or Danby are harder, denser, and less acid sensitive than other marbles, meaning that they will etch more slowly. Etching is caused by acid reacting with calcium carbonate and removing the surface, which creates a dull spot. Thus, honed finish marble generally hides wear and etching better than polished over time, and is more ideal for kitchen countertops and places where some acids will be present.

Creation: Non-foliated metamorphic stone made from compressed and heated limestone. This process crushes and destroys fossils. As it undergoes higher temperatures and levels of pressure in creation, marble is often the hardest in the calcium carbonate based family of stone.

Finishes: Marble is most commonly polished or honed. Occasionally, it may be brushed/satin. Being on the harder side of the scale marble can take a polish, but etching from acids or wear (such as what a floor may receive) can remove that polish over time. Marble is generally cross-cut, but may also be vein-cut to show the layers.

LIMESTONE -

Common uses: Because limestone is softer than granite and more sensitive to acids, many people opt to use it for areas such as bathroom vanities. Also often used in residential flooring, backsplashes, and shower walls. A few limestones are very hard and dense, and can be used for high-traffic spaces.

Care: Limestone should be sealed. Care should be taken to keep acids off limestone, as they will etch the surface. Sealing will help the stone resist staining, but will not prevent etching. Limestone is often softer and less dense than Marble, and can be scratched by steel.

Creation: Sedimentary rock formed underground and underwater. Limestone is comprised of calcium deposits of shell and bone. Generally from coastal regions and lakebeds, fossilized shellfish are often visible in the stone.

Finishes: Most limestone is available only in a honed finish. Occasionally, brushed/satin can be found. Some limestone on the harder side of the scale (Seagrass) can take a polish, but etching from acids or wear (such as what a floor may receive) will remove that polish over time. Limestone is generally cross-cut, but may also be vein-cut to show the layers.

TRAVERTINE -

Common uses: Because travertine is softer and more sensitive to acids than granite, marble, and limestone, many people opt to use it for areas such as bathroom vanities, residential flooring, shower walls, and walls.

Care: Travertine should be sealed. Care should be taken to keep acids off travertine, as they will etch the surface. Sealing will help stone resist staining, but will not prevent etching. Travertine is usually softer and less dense than marble and limestone, and can be scratched by steel.

Creation: Formed in mineral springs, travertine is formed from limestone and is usually less dense and softer than limestone. It is a terrestrial sedimentary rock formed by particles of calcium carbonate that are transported by spring water. Thus, travertine often has concentric rings or waves of movement when crosscut.

Finishes: Most travertine is available only in a honed finish, as it usually will not hold a polish. Even when they can take a polish, etching from acids or wear (such as what a floor may receive) will remove that polish over time. Travertine is generally cross-cut to show waves and rings, but may also be vein-cut to show the layers.

Other Notes: Travertines have holes which are typically filled with a cement or resin based fill at the factory. The holes in unfilled travertine get filled by grout upon installation.

ONYX -

Common uses: Because onyx is the softest in the calcium carbonite based family of stone, many people opt to use it for areas where it can be displayed without encountering acids or things that might scratch it. An example would be conference room walls or behind a front desk where it could be backlit, shower walls, or water features.

Care: Onyx should be sealed and treated with caution. Care should be taken to keep acids off it, as they will etch the surface. Sealing will help stone resist staining, but will not prevent etching. Onyx can also be scratched by steel. Thus, only neutral cleaners should be used and abrasive materials should be avoided.

Creation: Onyx is a sedimentary stone. Formed in in caves, onyx is the meeting of stalactites and stalagmites. As the minerals seep down to fill the cave, they are deposited until the cave has filled.

Finishes: Most onyx is available in a polished finish. Tiles can sometimes be found in a tumbled finish, which tends to show less wear over time.

	SEDIMENTARY	METAMORPHIC	IGNEOUS
Calcium Carbonate Based	Limestone Travertine Onyx	Marble	
Silica Based	Sandstone	Slate Quartzite Soapstone Schist	Granite Basalt

Engineered Stones

QUARTZ -

Common uses: Residential and commercial countertops, shower walls. It can be made to look like many types of stone and thus is often used as a low maintenance replacement for those looks.

Care: Sealing is not needed. Cleaning is done with mild soap and water.

Creation: Quartz is made by combining 90-93% natural quartz aggregate with a polyester resin and color pigments. These are poured into a mold and then pressed and heated to cure using patented Breton vacuum/vibration technology. The bottom is then calibrated and the top is polished.

Finishes: Most commonly available in polished. Brushed or satin may sometimes also be available. Honed is less common, as it requires more effort to keep looking pristine. PentalQuartz is a lower polish than most polished granite, giving it the benefits of honed and polished.

Other Notes: Due to pigments and binders used, quartz is affected by UV rays and is not appropriate for outdoor applications. It is also not suitable for areas subjected to high or variable heat.

LAPITEC -

Common uses: Residential and commercial countertops and backsplashes, shower walls, exterior kitchens, fireplaces, and cladding.

Care: Sealing is not needed. Cleaning is done with mild soap and water.

Creation: Mineral particles are fused in the sintering process to create a material harder and more fused than even porcelain.

Finishes: Satin (honed), Lux (polished), Vesuvio (a brushed-type finish; similar to some satin finishes), and Fossil (similar to flamed).

Other Notes: Because of resistance to acids, heat, scratching, and UV rays, Lapitec is one of few materials that is appropriate for almost any type of installation. It does not contain any resins and is highly inert. Also, because of its hardness, a certified fabricator must be used.

Ceramic & Porcelain Tiles

CERAMIC -

Common uses: Residential backsplashes, shower walls, decorative elements.

Care: Sealing is recommended for unglazed or crackle glazed ceramics. Cleaning is done with soap and water.

Creation: Clay is formed into shapes and then fused with heat in a kiln. Most of the time, it is then glazed and then goes through the kiln again. Hardness and level of absorbency vary depending on the type of clay, pressure used to form, and the heat of the kiln.

Finishes: Typically a matte or glossy glaze.

Other Notes: Ceramic is fired at a lower temperature than porcelain, making it a softer material. Typically suitable for wall use only, some smaller sized ceramic tiles can be used for low traffic residential floors. A wide number of colors can be created in ceramic, and it can sometimes be possible to do custom sizes or colors.

PORCELAIN -

Common uses: Residential and commercial floors, backsplashes, shower walls, fireplaces.

Care: In most cases, sealing is not needed. Cleaning is done with soap and water. Textured tiles can be cleaned using a bristled brush or a Magic Eraser mop to ease cleaning.

Creation: Porcelain is a subset of ceramic, and is the hardest and least absorbent tile. Clay of primarily feldspar particles are pressed and then fused with heat in a kiln. The resulting material is harder than standard ceramic tiles and is considered nearly impervious.

Finishes: Matte, polished, and various textures such as strutturato or brushed.

Other Notes: Because of resistance to acids, heat, scratching, and UV rays, porcelain is one of few materials that is appropriate for almost any type of installation. It is used widely in every application from light residential to heavy commercial.