HOW MARBLE STACKS UP AGAINST OTHER MATERIALS: A FULL COMPARISON



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There are many different materials to choose from when finishing countertops, tile flooring or creating stunning accents in your home, business, or commercial space. Each material has either been naturally quarried or specifically engineered to create a centerpiece of beauty. It is important to note that no piece of stone or material is perfect. Understanding how to weigh each type of surface- their strengths, weaknesses, benefits or drawbacks so you can confidently choose which one best suits your needs in finishing a project with longevity is key!

It may seem overwhelming when browsing all your options and the comparison boils down to the priority of qualities and strengths you are looking for in the material. We have compiled helpful information on competitive material to help guide you through your next material decision making process.

Below is a guide including the pros and cons of competitive materials to help guide your decision!







Marble is a metamorphosed Limestone that is composed of, generally, 99.5% pure calcium carbonate and 0.5% is a mix of other minerals. The variation of the mix of other materials results in its unique veining and natural impurities. Marble is created when these elements are heated and compressed under pressure. Marble has been known for centuries for its bold colors and elegant veining with fine grains and smooth textures allowing for a variety of finishes. No two slabs of marble are exactly the same, which is the natural variation many seek. Marble is known for its luxurious appeal, and it has been sought after by designers, architects and homeowners since the beginning of time.

The general assumption and concern of marble is its greater porosity. Marble is naturally a more porous stone, but when maintained regularly will last a lifetime. At Colorado Stone Quarries, we utilize Soundstone technology that allows us to increase the mechanical strength and decrease porosity of marble. With proper care and regular maintenance, marble will last a lifetime and ages even more beautifully with time and wear.



LONGEVITY

RATING (OVER 10)



### **OVERALL DESCRIPTION**

The durability of marble lasts a lifetime. "It was the durability, endurance, and engineering flexibility of using natural stone building materials that allowed so many ancient landmarks to stand the test of time. The Great Pyramids of Egypt, Machu Picchu, and the Mayan city of Tikal are just a handful of examples"

PROS	CONS	
•With proper care, marble and natural stone products will last a lifetime and age beautifully	•Longevity is directly correlated to maintenance - if the finished product is maintained annually the longevity is higher. If the product is not maintained correctly the longevity quickly decreases.	
EXPERT COMMENTARY •Flooring 100+ years with proper maintenance •Countertops and exterior - last a lifetime		
sou	RCES	

https://naturalstonecouncil.org/material-fact-sheet/marble-fact-sheet



SUSTAINABILITY

RATING (OVER 10)

OVERALL DESCRIPTION

As a natural product of the Earth, natural stone/marble is more sustainable than other products. Quarries are reclaiming the land to its original state much faster and efficiently now than ever before and go to extreme ends to increase the sustainability of marble.

### PROS

- •No Volatile Organic Compounds (VOC's) emitted directly from marble
- •Modern mining techniques and modern technology decrease the environmental damage
- •Creates fewer kilograms of CO2 per ton than other materials
- •Natural stone can be recycled and reused (landscaping, fill, retaining walls, walkways, re-installation on new buildings, etc.)
- •All water from quarry and plant are recycled and reused
- ·Local material sourcing- low carbon footprint
- •No synthetic ingredients in natural stone

## CONS

- •Domestic quarries make marble more affordable in the states
- •If you are flexible with imperfections and colors, the price of marble will be lower
- •ROI is high, high demand and desire for marble

### EXPERT COMMENTARY

The natural stone industry is always looking to reduce it's carbon footprint on our planet and its resources.

### SOURCES

https://greenerideal.com/sponsored/10-reasons-why-natural-stone-eco-friendly-building-material/

### POROSITY

RATING (OVER 10)



OVERALL DESCRIPTION

Although marble is known to be more porous than other competitive materials, CSQ utilizes new technology in order to decrease the porosity and increase the durability of marble. After marble has been treated with our Soundstone technology and sealant, the porosity of marble rates as an 8. Soundstone technology drastically reduces the porosity of marble.

### PROS

CONS

- Marble is overall more porous than other competitive materials
- •There is technology (specifically our Soundstone technology) that allows to increase the mechanical strength and decrease porosity of marble
- •Many sealants and recommended products to help with porosity

# •Naturally more porous than other stones and competitive materials

#### EXPERT COMMENTARY

Colorado Stone Quarries utilizes the most sophisticated technology and equipment made by Pedrini, in combination with premium surface care products made by FILA, to enhance and maintain the quality our pristine marble. The technology and process is dedicated and tailored to each unique stone and the final product is much harder, less porous and more durable while keeping its beauty intact.

MARBLE

#### APPLICATIONS

RATING (OVER 10)

#### **OVERALL DESCRIPTION**

VER 10)

Marble should be installed by a professional to ensure it is installed correctly and taken care of appropriately.

PROS	CONS
•No synthetic ingredients in natural stone that are	<ul> <li>Need specific equipment for application and</li></ul>
toxic during application and installation	installation, recommended to be done by a
•There is a wide range of application of all material	professional

### MAINTENANCE

RATING (OVER 10)

•

**OVERALL DESCRIPTION** 

Requires minimal maintenance in order to maintain the longevity of marble.

PROS	CONS
<ul> <li>Many sealants and recommended products for marble products for both residential and commercial use</li> <li>When maintained regularly, marble will last a lifetime and age beautifully</li> <li>Surface damage can easily be repaired</li> </ul>	•Natural stone is prone to chips and stains when not maintained

MARBLE

APPEARANCE

RATING (OVER 10)



CONS

Marble is a natural stone that offers unique beauty and impurities in each finished product. The veining and coloring is natural, which creates the pristine beauty of the stone. Each inconsistency is beautiful in its nature.

#### PROS

•Stunning unique appearance, no two products, slabs, etc. are exactly the same

•Marble can have different finishes on the stone like Polished-Honde-Brushed-Sand Blasted-Bush hammer- engineered stone cannot •Subjective to customer's opinion- customer needs to appreciate and desire the uniqueness and inconsistencies of natural, raw beauty of our world

### EXPERT COMMENTARY

Natural stone/marble is unique in appearance. Not one slab, tile, etc. is the exact same as another. The appearance of marble improves with age, unlike engineered and unnatural products.

# MARBLE VS. QUARTZ

Quartz is in fact one of the most abundant natural minerals on Earth. However, Quartz products are not solely made of the natural mineral. Quartz has a large production process. When creating countertops and other products, manufacturers combine ground natural quartz which adhere to resins to create the final product. Quartz countertops are generally 90% quartz and 10% resins, polymers, and pigments. Manufacturers go to extreme odds to ensure the finished slabs are airtight and non-porous.

Quartz products are highly customizable. Unlike natural stone, the veining of quartz tends to lack authenticity and uniqueness, as natural stone does, and has an engineered, repetitive look.

The durability of quartz products is high due to the combination of natural quartz and resins. Quartz is not required to be sealed regularly to maintain its durability. Although quartz is an extremely durable option, due to its combination of the natural mineral with resins, quartz is prone to heat damage as well as discoloration from the sun. It is highly recommended to use heat protection for quartz products to avoid burning damage or other aesthetic issues over time.

Marble is a heat resistant natural product, therefore when used for a countertop application, the use of heat protection when putting a hot pan or pot on the surface is not necessary.





QUARTZ	APPLICATIONS		
COVER 10)	OVERALL DESCRIPTION Quartz is a heavy material that requires a trained professional to install and cannot be installed outdoors.		
PROS		CONS	
•The natural quartz is heat resistant •Very durable during installation •Difficult to install •Indoor use only		ds to be installed by	
SOURCES https://www.concretenetwork.com/concrete/countertops/			



QUARTZ	POROSITY		
RATING (OVER 10)	OVERALL DESCRIPTION Quartz is a low porosity material that allows for a customizable product.		
PROS	CONS		
Resins make product non-porous Do not need sealant •If damage is caused to the resins through heat, thi will damage the porosity of the quartz		the resins through heat, this ity of the quartz	
SOURCES			
https://www.concretenetwork.com/concrete/countertops/			





# MARBLE VS. PORCELAIN

Porcelain products are one of the most customizable manufactured products on the market. Porcelain is made of kaolinite, also known as "china clay" in combination with feldspar, metal oxides, and silica. All the materials are combined under extreme heat and glazed in a kiln, which creates a final product that is durable and requires less maintenance. Unlike other engineered materials, Porcelain has a higher heat resistance.

Due to porcelain's engineered properties, if porcelain is chipped or damaged, it is difficult to repair. The veining and patterns of porcelain are only surface, when the material experiences chips or damage, it must be repaired to maintain the same look. This aspect of porcelain also contributes to the limited amount of edge and finish styles for the products.

Marble holds natural beauties and impurities that porcelain is unable to replicate. The durability and natural state of marble ensures the stone will last even with wear. The colors and veining of marble is authentic and unique and runs deep into each stone product.

PORCELAIN	LONGEVITY		
RATING (OVER 10)	OVERALL DESCRIPTION Porcelain products have a shorter lifespan than natural stone. The manufactured properties do not age as well.		
PROS		CONS	
-		•Shorter lifespan than nat •Prone to damage due to buffed out or fixed as eas	ural stone o its properties, cannot be ily as natural stone
	SUSTAINAR		

RATING	
(OVER 10)	

**OVERALL DESCRIPTION** 



Porcelain products are manufactured and can therefore be reused and recycled.

PROS	сонз
<ul> <li>Most manufacturers use closed-loop facilities that recycle the extra material</li> <li>Kiln fired in factory and do not emit volatile organic compounds (VOCs) into the air</li> <li>Local manufacturers all over US - lower carbon footprint</li> </ul>	•Requires a lot of energy to produce



### PORCELAIN

POROSITY

RATING (OVER 10)

10

Porcelain products are manufactured and can therefore be reused and recycled.

**OVERALL DESCRIPTION** 

PROS	СОИЗ
•Nonporous •Glaze applied with high temperatures in kiln makes the product waterproof	-

PORCELAIN	APPEARANCE	
RATING (OVER 10)	OVERALL DESCRIPTION	
8	Porcelain products are one of the most customizable m	anufactured products.

PROS	CONS
<ul> <li>Will not etch or discolor like natural stones</li> <li>Resistant to sun damage and fading, more so than other manufactured products</li> <li>Variety of finishes (polished/glossy, matte/more natural look)</li> <li>Glazed to resemble other material and natural stones- can mimic patterns and veining</li> </ul>	<ul> <li>Not natural appearing - patterns appear unauthentic and engineered</li> <li>Patterns only appear on the surface - if any cracks or damage occurs, the veining or pattern is damaged</li> <li>Finished edge styles are limited due to its thin nature</li> </ul>

sources https://www.msisurfaces.com/blogs/post/2021/02/16/porcelain-countertops-pros-cons -review-2021.aspx



PORCELAIN	MAINTENAN	1CE
RATING (OVER 10)	ov	ERALL DESCRIPTION
8	Porcelain has overall little regul to fix surface damages.	ar maintenance, however it is almost impossible
PROS		CONS
•Glaze applied durin protectant which r •No sealant require •High temperature r	ng manufacturing acts as a huge equires very little maintenance d regularly resistant	•Cannot repair damage to porcelain products - customization/patterns are only on the surface •Almost impossible to fix surface damages

PORCELAIN	APPLICATIO	NS	
RATING (OVER 10)	ov	ERALL DESCRIPTION	
8	The application and installatio installers. The products are thin	n of porcelain products and prone to cracking	can be difficult for and damage.
PROS		CONS	

- •Manufactured in extremely large slabs, little seams during installation/final product •Can be used for external applications
- •Thin and requires a professional to install to avoid cracking or damage to the product •Does not raise value of home like natural stone does









# MARBLE VS. CEMENT-BASED PRODUCTS

Cement based products have more recently gained popularity due to their versatility in design. The customization of cement is endless, and unlike other engineered products the texture and finish are also customizable due to its composition.

The curing process of cement is a lengthy process that can take up to 28 days for countertops. Due to the heaviness of cement-based products, structural support such as cabinets and flooring may need to be altered to support certain cement products such as kitchen countertops.

Cement based products have a porous composition and require regular maintenance to avoid staining and discoloration. Sealants and wax must be regularly applied to cement-based products to create a more durable surface. Cement is sensitive to temperature changes, which can cause these products to expand and/or contract.

Marble, at its natural state, is comparable to cement-based products as far as porosity. However, the Soundstone technological process, which was created specifically for natural stone, allows the mechanical strength to drastically increase and porosity to decrease. After Soundstone treatment, modulus of elasticity increases 2-3 times. Unlike cement-based products, marble is created under extreme heat and pressure and is not sensitive to/will not crack due to temperature changes. The composition of marble allows its products to have different finishes on the stone such as polished, honed, brushed, sand blasted, bush hammer, etc.



### **CEMENT-BASED PRODUCT**

### SUSTAINABILITY

RATING (OVER 10)



Concrete or cement based products are not environmentally sustainable. The production of the products cause more harm to the environment than good.

PROS	CONS
-	<ul> <li>The sealants that protect concrete are a significant, regulated source of VOCs that negatively affect internal and external air quality</li> <li>Concrete without surface coatings may emit VOCs, due to internal additives or impurities</li> <li>Concrete is said to be responsible for 4-8% of the world's CO2</li> <li>1/10<sup>th</sup> of the world's industrial water consumption is caused by the concrete industry</li> </ul>
<b>EXPERT COM</b> Cement based Products are not environment harm to the environment than good.	MENTARY ally sustainable, overall they cause more
SOUR	CES

https://www.concretenetwork.com/concrete/countertops/







CEMENT-BASED PRODUCT		LONGEVITY	
RATING (OVER 10)	OV	ERALL DESCRIPTION	
Concrete products	can last for dec	ades if maintained well through	sealing and waxing.
PROS		CONS	
•Strong •Glass fiber reinforced concrete (GFRC) to crack	) less likely	•Longevity is directly correlat the finished product is mai longevity is higher. If the pro correctly the longevity quickl	ted to maintenance - if intained annually the duct is not maintained ly decreases.
	SOURC	ES	
nups://www.o	concretenetwork		

### **CEMENT-BASED PRODUCT**

### APPEARANCE

#### RATING (OVER 10)





Concrete/Cement based products are customizable and can become exactly what you envision.

### PROS

•Customization is endless - can choose exactly what color and shape you would like

- •Can replicate the look of marble, granite, etc.
- •Textures are customizable

### CONS

•Temperature changes can cause expansion, contraction, etc.

### **CEMENT-BASED PRODUCT**

## APPLICATIONS

RATING (OVER 10)

•

The application and installation of concrete/cement based products takes a lot of time to design, cast and cure.

**OVERALL DESCRIPTION** 

PROS	CONS
•Many variables involved in the application and installation of concrete or cement based products •Cement Products can be used anywhere - outdoors and indoors	<ul> <li>Concrete is heavy</li> <li>Lengthy process - curing takes about 28 days for countertops</li> </ul>

# SOURCES

https://www.concretenetwork.com/concrete/countertops/

CEMENT-BASED PRO	DDUCT	4	MAINTENANCE	
RATING (OVER 10)		OVE	ERALL DESCRIPTION	
<b>7</b> Due to appea	concrete's porc rance.	ous nature, it re	equires regular maintenance to mainta	ain the intended
PROS			CONS	
<ul> <li>PROS</li> <li>As long as the concrete is a easy to clean and maintain</li> <li>Amount of damage depend</li> <li>Heat resistant</li> <li>Strong</li> </ul>	regularly maint I Is on sealer and	ained, it is I wax	CONS •Cracks can develop due to natura •Chips easily if not maintained	Il shrinkage
<ul> <li>PROS</li> <li>As long as the concrete is a easy to clean and maintain</li> <li>Amount of damage depend</li> <li>Heat resistant</li> <li>Strong</li> </ul>	regularly maint I Is on sealer and	ained, it is I wax SOUR	СОНS •Cracks can develop due to natura •Chips easily if not maintained	II shrinkage





# Why Marble?

When it comes to natural stone, there is simply no comparison. For centuries, marble has been prized for its natural beauty and elegance and has been used in some of the most iconic buildings in the world, which still stand today. Today, engineered and man-made alternatives to natural stone are becoming more common, but each lacks the same natural beauty of marble that can never be replicated.

As a natural product of Mother Nature, marble is more sustainable than other competitive products. Today, quarries are reclaiming land to its original state much faster and more efficiently than ever before and go to extreme ends to increase the sustainability of marble. Modern mining and technology drastically decrease the environmental effects of marble. All water from our quarry is recycled and reused and there are no synthetic ingredients in natural stone. Marble also creates fewer kilograms of CO2 per ton than other materials.

# Why are Architects & Designers Going Back to Marble?

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60 60

The architect and designer community is beginning to shift their mindset from designing solely for beauty and function into designing and creating structures with longevity- that will last a lifetime. Porcelain, quartz and cement based products are in fact durable, but they aren't noble enough to last 200+ years as marble has been known to. The durability of marble truly lasts a lifetime. "It was the durability, endurance, and engineering flexibility of using natural stone building materials that allowed so many ancient landmarks to stand the test of time. The Great Pyramids of Egypt, Machu Picchu, and the Mayan city of Tikal are just a handful of examples." - Natural Stone Council. Yule marble was specifically chosen to complete The Tomb of the Unknown Soldier, The Lincoln Memorial, parts of the Denver Airport, areas in the Denver Courthouse and Post Office, Federal Buildings, International iconic malls and buildings, and many more. When architects and designers choose marble as their material, the cost may be higher, however the structure or product could be there forever.

# Why Colorado Stone Quarries?



Colorado Stone Quarries utilizes one of very few Soundstone technological processes and machinery in the world and the only one in the United States, which were patented by Pedrini, a company based in Italy specializing in the processing of natural stone. Soundstone is a complete 100% impregnation process of stone that significantly improves material mechanical strength and drastically reduces material porosity. The final product is much harder, less porous and more durable with an increase in mechanical strength. The process is extremely effective, economical, and eco-friendly. Soundstone does not contain toxic resins or solvents, nor does it produce dangerous smoke for humans or the environment.

At Colorado Stone Quarries, utilizing the Soundstone technology to treat our marble products drastically improves the confidence in our customers upon purchase and installation and sets us apart from our competitors and competitive materials. Not only does it improve the marble composition and strength itself, but also enhances the coloring and overall beauty of our marble - even more confidently guaranteeing the timeless classic, marble, will last a lifetime.

Our Pride of America Mine holds quarrying roots that date far back in American history. Yule Marble was first discovered in Marble, Colorado in 1873. Since then, miners throughout history have worked hard to ensure the prestigious Yule marble was highly recognized in America and throughout the world. Today, Colorado Stone Quarries has the honor of preserving and continuing the legacy of America's quarrying tradition. Our team uses the best quarrying techniques, developed over hundreds of years, and the most sophisticated technology to continue to produce and supply the finest marble products to the world market.

Our Colorado Stone Quarries team is proud of our factory. We operate out of our 140,000 square foot warehouse that houses the most sophisticated technology and equipment made in combination with premium surface care products, to enhance and maintain the quality of our pristine marble. This enables our production capacity to reach 1 million square feet of tile and 1 million square feet of slabs per year.

Our marble is American quarried and produced, and for that we are extremely proud!

We are passionate about educating our customers on marble and our unique varieties and would love the opportunity to assist you throughout your material decision making process and buying journey.

RATINGS	Nr2	ible Of	Jartz Po	rcelain Ce
Longevity	10	8	7	7
Sustainability	9	6	8	2
Porosity	6	9	10	4
Appearance	10	7	8	7
Applications	8	6	8	8
Maintenance	8	7	8	7





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