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PRODUCT INFORMATION

What is Manufactured Stone?

Manufactured Stone is made of Portland cement, lightweight aggregates, and mineral oxides for coloration. Each stone is cast from individual molds that have been crafted from real natural stone, resulting in a natural and realistic visual.

What is the advantage of manufactured stone versus other types of siding that can be used?

	<i>Manufactured Stone</i>	
<i>Brick</i>		Look of stone for about the same price as brick
<i>Natural Stone</i>		The same look for a fraction of the installed price
<i>Vinyl</i>		Look of stone and durability of brick

Why is this product considered an adhered veneer?

Adhered veneers are bonded, not supported. They are attached directly to the substrate with mortar without wall ties, lintels, brick ledges or steel support.

What is the weight per square foot?

Weight will vary somewhat by profile, but our stone weighs an average of 11-13 pounds per square foot.

What is the thickness of Manufactured Stone?

Thickness will vary by profile, from between 0.75-1.65 inches thick. When installed, there will be 0.5-1.0 inches of mortar behind the stone, yielding a total thickness of 1.25-2.65 inches.

What is the shade variation level?

Some color profiles consist of as many as 13 or 14 different colors, applied across several different stones of a given stone profile. Given that, it may take up to 5-6 square feet of a product to be laid out to see the total color profile.

Does this product have any Recycled Material Content?

There is minimal recycled material in the product at this time. However, this product is produced in 3 manufacturing facilities across the US which may help contribute towards LEED certification if located within a 500 mile radius of the job site.

Will Manufactured Stone fade or change color over time?

Manufactured Stone will weather similar to natural stone. The colors lose a bit of their contrast over the years, but always look natural. To reduce the affects of weathering, seal the stone with a breathable, non-film-forming masonry sealer in accordance with the manufacturer's recommendations.

Is a warranty offered for Manufactured Stone?

Yes, a 75 year warranty is offered, provided that the recommended installation, care and maintenance procedures are followed.

What Seets Division does this product fall into?

<i>PRIMARY</i>	
04 73 00	Manufactured Stone Masonry
<i>SECONDARY</i>	
04 70 00	Manufactured Masonry
04 22 00.13	Concrete Unit Veneer Masonry
04 21 13.13	Brick Veneer Masonry

APPLICATION

Can Daltile's Manufactured Stone be used in all climates?

Yes, our manufactured stone can handle any climate in North America if installed in accordance with our installation instructions.

Can Daltile's Manufactured Stone be used on the floor?

No, Manufactured Stone is not designed to handle the stresses of floor traffic.

How high can Manufactured Stone be installed on buildings?

The only height limitation is 30 feet on wood frame construction.

Are there any restrictions on where Manufactured Stone can be used?

Manufactured Stone should not be used the following applications:

- In direct contact with chemicals (including pool chemicals)

- Submerged in water
- On floors, driveways, or on any horizontal surface
- In exterior applications that are below grade

INSTALLATION

What is the typical cost per square foot for installation?

Many factors affect the overall cost of installing Manufactured Stone, but the size and location of the project are the primary factors. Excluding the cost of the Manufactured Stone, a large contractor may install for as low as \$5.50 per square foot while a small contractor may install for \$10.00 per square foot.

What are the types of mortar that can be used, and in what situations should they be used?

- Scratch coat - Type N or Type S masonry mortar
- Bonding mortar - Type N or Type S masonry mortar, or modified (thin set) mortars capable of achieving 50 psi shear bond strength
- Grouting mortar - Type N or Type S masonry mortar

What is the recommended grout joint?

The width and depth of a grout joint can dramatically change the look of the finished product, and is truly up to the end user to choose. However, a standard grout joint is 1/2 inch.

Should a grout release be used?

No. In applications where a mortar joint is used, fill in the joints with a mortar bag, taking care to avoid getting mortar on the stone's surface. Any accidental smears can be removed with a whisk broom after the mortar is crumbly. Never use a wet brush or sponge to clean mortar smears, as this can cause a haze on the surface of the stones.

What is the fire rating for Manufactured Stone? Are there any special considerations for installation in high temperature applications such as fireplace surrounds or for use as a backsplash behind stoves?

Manufactured Stone is non-combustible and will not generate smoke or spread flames. It can be used on the outside of fireplaces, chimneys, hearths, and backsplashes by maintaining a distance of 18 inches from open flame/heat source. Manufactured Stone cannot be used inside fireboxes or fire pits or in direct contact with flames, coals or ashes.

Are water resistive barriers recommended?

Over framing, two layers of water resistive barriers are recommended for exterior applications to prevent moisture from penetrating the exterior wall. Please reference our Installation Guide for recommendations regarding water resistive barriers.

Are there special instructions for cold or hot weather installation?

Yes. There are considerations for temperatures below 40°F or above 90°F.

Cold Weather Application

Applications should be protected from temperatures below 40° Fahrenheit (4° Celsius). The use of anti-freeze admixtures to lower the freezing point of the mortar is not recommended. However, if used, accelerating admixtures shall comply with C 1384; accelerating admixtures containing calcium chloride are not recommended. Manufactured Stone pieces containing visible frozen moisture shall not be installed. The installation area should be sheltered and heated to keep the temperature above 40° Fahrenheit (4° Celsius).

Hot Weather Application

If the environmental conditions during installation exceed 90° Fahrenheit (32° Celsius), additional water may be needed on the scratch coated surface and the backs of the Manufactured Stone being applied. Providing shade and/or frequent misting of the wall may be required. Consult with mortar manufacturer to determine if mortar mix hot weather mix options are available. Local building code hot weather methods should be followed.

SEALING

Does Daltile recommend sealing the product?

Yes, we recommend using a breathable, non-film forming masonry sealer to prevent staining of the stone.

Sealants are particularly important for areas commonly affected by water run-off to avoid staining from dirt or rust and for all dry-stack applications.

Why should dry stack applications be sealed?

Without the additional strength of a grout joint, it is even more critical that the mason correctly installs the stone. A sealer will help ensure that water will not enter the system and create problems, such as damage from freeze-thaw cycles.

What is the average typical cost per square foot to seal the product?

The typical cost is about \$0.10 per square foot. Masons sometimes charges as much as \$1.00 per square foot.

CARE & MAINTENANCE

How do I clean Manufactured Stone?

- Do not use a wire brush, as it will cause damage to the surface.

- Do not power-wash, sandblast, or use acid or acid-based products.
- Dirt or other materials usually can be removed by rinsing with water.
- If needed, clean using a soft bristle brush with water and a solution of granulated soap and water. Rinse immediately with fresh water.

What is efflorescence and how can it be treated?

Efflorescence is a white or yellow powder that may form on the surface of masonry products. Efflorescence is the result of free lime in the cement being dissolved in the mixing water and working its way, as hydrated lime, to the surface of the concrete. Anything made from cement is susceptible to efflorescence, and it is particularly noticeable in colored concrete products such as manufactured stone.

Efflorescence can and should be cleaned immediately to prevent it from becoming permanent. Efflorescence should be cleaned from the surface by scrubbing with a soft bristle brush and clean water. Rinse immediately with clean water and allow the stone to dry. If efflorescence is still visible, repeat the procedure using a solution of 1 part household vinegar and 5 parts water. Always rinse immediately with clean water. To prevent reoccurrence, you can seal the stone per our installation instructions. There are numerous off the shelf manufactured stone cleaners that work as well.

If a stone is damaged after installation, can anything be done to repair the damage?

A color touch up kit for cosmetic damage to the stones' surface is available. Please contact your local Daltille Representative