

White Marble Chips

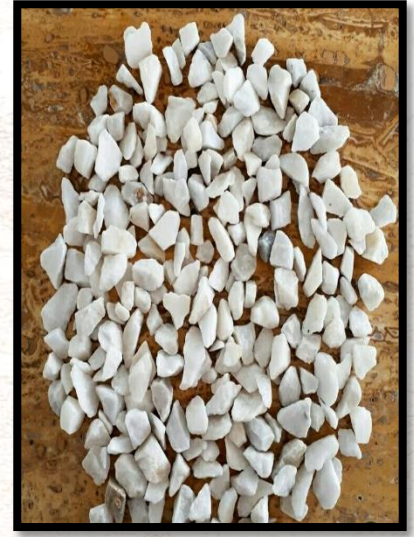
Material Definition, Processing, and Industrial Applications

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1. What Are White Marble Chips?

White marble chips are crushed, washed, and sized pieces of natural marble stone used as decorative stone aggregates. They originate from marble quarries and are processed through crushing equipment to desired sizes, then cleaned to remove dust and impurities before being graded for sale. These chips are appreciated for their bright, clean white appearance and smooth surface, making them a premium choice for landscaping and architectural decoration. White Marble Chips (White Gravel) are produced from natural white marble with a high calcium carbonate (CaCO_3) content. The raw marble is extracted from quarries, crushed, washed, and graded into controlled chip sizes. Depending on further processing, marble chips can be supplied as decorative aggregates or ground into fine powder for industrial use.



2. Processing Pathways , Marble chips follow two main processing paths :

1. Direct use as chips (decorative, construction, landscaping)
2. Grinding into marble powder for industrial applications

This dual pathway allows a single raw material to serve multiple industries.



3. Applications of White Marble Chips (Non-Powdered)

- Landscaping and urban design
- Composed primarily of calcium carbonate, offering a natural, elegant finish
- Aesthetic Brightness: Reflects sunlight, creating visually appealing landscapes and architectural spaces
- Garden Supplies
- Flooring and paving base layers
- Decorative concrete and terrazzo systems
- Mosaic and architectural elements
- Durability: Resistant to pressure, wear, and most weather conditions with long-term stability
- Eco-Friendly: Being natural stone, does not introduce harmful chemicals into the environment
- And Etc

4. Typical Sizes and Presentation are available in multiple size ranges such as :

0 - 0/7 mm	7 - 2/5 mm	2/5 - 4 mm	4 - 6 mm	6 - 8 mm	8 - 12 mm
12 - 16 mm	16 - 20 mm	20 - 25 mm	25 - 32 mm		



5. Industrial Applications of Powdered White Marble Chips

When White Marble Chips are ground into fine powder, they become a multi-purpose mineral input used across a wide range of industrial sectors. Depending on particle size, purity, and chemical composition, the powder serves both functional and cost-optimization roles.

In Iran, the particle size classification of calcium carbonate powder is commonly expressed in mesh sizes, while in major global markets it is measured in microns (μm).

European and UAE industrial standards are generally based on micron sizing, which provides more precise and technical particle size control.

In Iran, calcium carbonate powder is typically produced from 200 mesh up to 2500 mesh, depending on the customer's specific requirements and the intended industrial applications

5.1 Ceramic and Tile Industry

Powdered white marble is used as a key raw material in:

Ceramic tiles

Sanitary ware (toilets, washbasins)

Porcelain products and decorative ceramics

Its high whiteness and suitable firing behavior improve the final product's color uniformity, surface quality, and structural consistency.

5.2 Paper Manufacturing Industry

Used as:

Filler

Coating material

in the production of high-quality papers such as writing paper, magazines, labels, and packaging papers.

It enhances paper whiteness, smoothness, opacity, and printability.

5.3 Paint and Surface Coating Industries

Functions as a pigment extender or functional filler in:

Oil-based paints

Water-based paints

Industrial coatings

It improves covering power, color stability, and mechanical resistance.

5.4 Plastic and Polymer Industry

Used as a filler in:

PVC

Polyethylene (PE)

Polypropylene (PP)

Polymer composites

It improves mechanical strength, surface smoothness, dimensional stability, and reduces production costs.

5.5 Rubber Industry

Applied as a reinforcing filler in:

Tires

Industrial rubber products

It increases abrasion resistance, durability, and mechanical stability.

5.6 Cosmetic and Personal Care Industry

Used in:

Cosmetic powders

Creams

Tooth whitening and dental care products

Due to its acceptable purity and desirable white color.

5.7 Adhesives, Sealants, and Specialty Industries

Adhesives and sealants: Used as a filler in construction and industrial adhesives

Filtration and purification systems: Used in chemical and biological filtration media

Agriculture: Applied as a soil pH regulator or as a carrier in fertilizers and pesticides

White cement production: Used due to high whiteness and mineral purity

Brick, tile, and glass factories: Acts as a mineral additive and flux

5.8 Key Technical Characteristics of White Marble Powder

High whiteness (typically above 85%)

High silica content (commonly above 60%)

Fine and uniform particle size

Good dispersion capability in composite materials

Suitable thermal resistance for industrial processes

5. Market Perspective

White Marble Chips and their powdered derivatives are consumed across construction, infrastructure, agriculture, and industrial manufacturing sectors. This multi-sector demand structure provides stable and diversified market absorption.

6. Colored marble chips, including green, yellow, red, black, mixed, gray, brown, etc., are widely used in mosaic making, space creation, interior decoration design, coastal construction, urban development, and other places.





