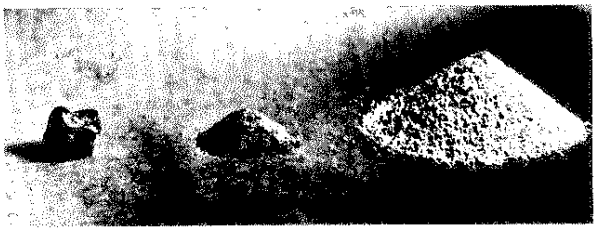
PERLITE FOR TEXTURED COATINGS

What is Perlite?
Perlite is not a trade name but a generic term for naturally occurring siliceous volcanic rock. The distinguishing feature which sets perlite apart from other volcanic glasses is that when heated to a suitable point in its softening range, it expands four to twenty times its original volume.

This expansion is due to the presence of two to six percent combined water in the crude perlite rock. When quickly heated to above 1600°F (870°C) the crude rock pops in a manner similar to popcorn as the combined water vaporizes and creates countless tiny bubbles in the heat softened glassy particles. It is these tiny glass-sealed bubbles which account for the amazing physical properties of expanded perlite.

The expansion process also creates one of perlite's most distinguishing characteristics: its white color. While the crude perlite rock may range from transparent to light gray to glossy black, the color of expanded perlite ranges from snowy white to grayish white.

Expanded perlite can be manufactured to weigh from 2 lb/ft^3 (32 kg/m^3) to 15 lb/ft^3 (240 kg/m^3) making it adaptable to numerous applications in the construction, industrial, chemical, horticultural and petrochemical industries. The unique properties of expanded perlite make it particularly useful in the manufacture of a variety of oil and water based textured coatings.

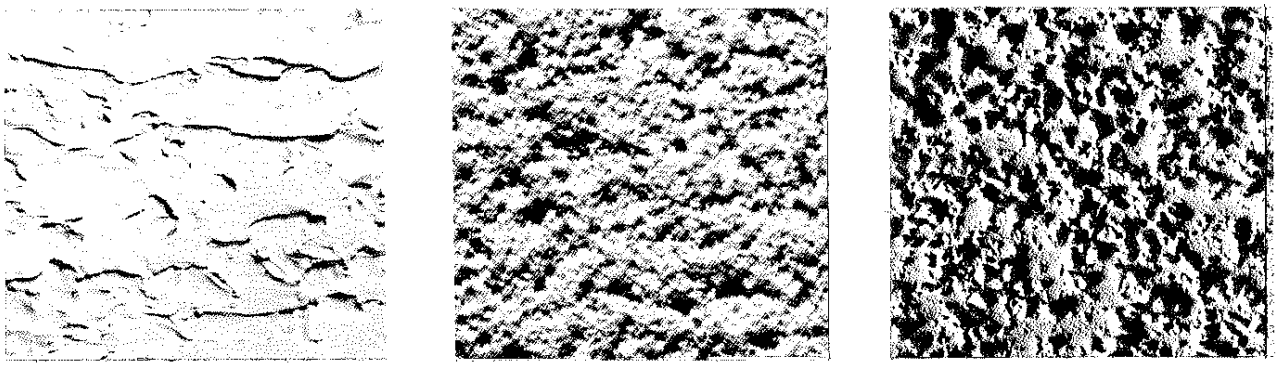


Crude Perlite | Crushed Crude Perlite | Expanded Perlite

Three stages of perlite production shown above illustrate the great increase in volume after furnacing. The same weight of perlite, 1 oz (28 gm) is shown in each photo.

Advantages of Perlite
Perlite offers advantages to both manufacturers and applicators of textured coatings. To manufacturers, perlite provides low cost bulk filling, low oil absorption and a snowy white color to reduce pigmentation costs. In addition, special grading provides a measure of quality control to textured coatings and minimizes dust. Because perlite is light in weight, shipping and handling costs are reduced.

The light weight of perlite textured coatings reduces the tendency of thick films to sag and run. As a result, applicators can apply heavier coatings in a single pass with subsequent labor savings. In addition, because perlite is inorganic and inert, it does not contribute to yellowing in industrial atmospheres. Even as a coating, applicators can benefit from perlite's unique insulating properties.



Typical Textured Finishes

Variety of Textures Possible

Perlite is available in different grades ranging from fine to coarse material. The table below provides general guidance on textures that may be achieved with different perlite particle sizes.

PERLITE PARTICLE/TEXTURE RELATIONSHIPS

Perlite Particle Size*	Degree of Texture
0.0 - 0.2 mm	Very fine or nontextured finishes
0.1 - 3.0 mm	Normal textured finishes
1.5 - 6.0 mm	Very bold textures

*Particle size ranges are approximate and presented for guidance only. Trials are suggested to determine materials for the desired effect. Blends of different grades may also be useful.

Textured Coating Formulation

Textured coatings utilizing the unique properties of perlite may be formulated for spray application and roller application. On a volume basis, significant quantities of perlite may be used to produce distinctive textures. In addition to lowering the cost of coatings, a reduction in weight can also be attained because of the low density of perlite. Trials should be conducted to determine the optimum amount of perlite necessary to achieve the desired texture.

Aggregate Blending

Expanded perlite is a mineral aggregate and the coarser particle sizes will not permit high shear rates during mixing. Slow speed mixing with broad paddles is recommended. Mixer horsepower requirements would be approximately 10 horsepower per 250 gal (1000 liter) batch at mixing speeds in the range of 50-200 rpm. Formulations requiring a high level of shear should be mixed with high speed equipment prior to the addition of perlite. Provisions should be made to allow for 40% bulking while perlite is being added to the coating mix.

Application of Perlite Textured Coatings

Heavy duty spray equipment should be used to apply perlite textured coatings. Typical tip sizes are:

Bold Textures	3/8-1/2 in. (8-12mm)
Medium (Normal Textures)	3/16-1/4 in. (5-6.5mm)
Fine Textures	1/8-3/16 in. (3-5mm)

When coatings are to be applied with rollers, 3/4 to 1-1/4 in. (18-30 mm) long nap rollers or a honeycomb foam roller should be used for fine and medium textures. For bold textures, a deeply patterned roller is recommended for best results.

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