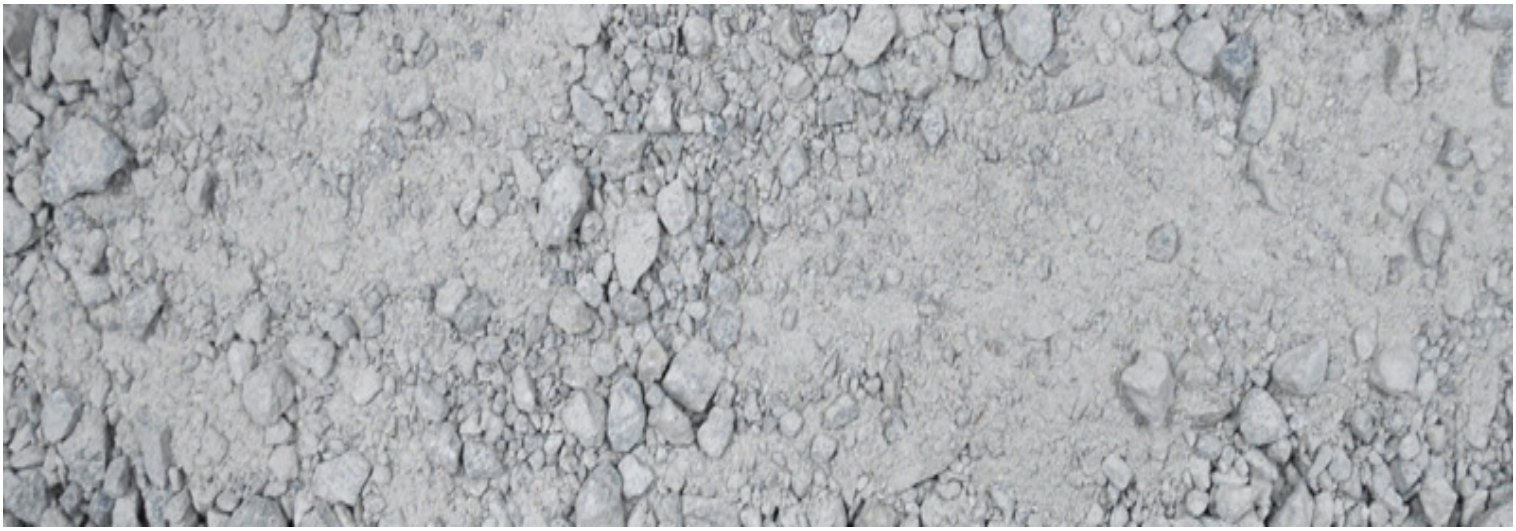

Processing and Drying LIME

PROCESSING • CHARACTERISTICS • PRODUCTION • KILNS • SOLUTIONS

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VULCAN
DRYING SYSTEMS

PROCESSING AND DRYING LIME

Lime is an essential material in the construction and engineering industries. In addition to this, lime has numerous everyday uses, including paint, paper, drainage treatment, and toothpaste. Cities, industrial facilities, utilities, and mining operations depend on lime to help them comply with environmental regulations.

Lime is also used as a neutralizing agent in many scrubbers, resulting in a sludge high in moisture. This waste product can be dried for additional use.

LIMESTONE'S CHARACTERISTICS

Limestone has several characteristics that distinguish is from other materials:

- Mostly composed of calcium carbonate
- Consists of rocks that contain 80%+ calcium and magnesium carbonates, extracted from quarries and mines
- May be cut, crushed, and chemically altered
- Lime is the high-temperature product of limestone that has been calcined

PRODUCTION OF LIME

Lime production begins with the extraction of limestone from quarries and mines. The limestone is then fed into a crusher to break the rock before being screened into various sizes and washed. This processed stone is then transported to a lime kiln.

In order to calcine limestone, there must be a significant transfer of heat. This heat transfer is divided into three stages: preheating, calcining, and cooling. First, the limestone is heated by direct contact with the exhaust gases from the kiln. Then, the kiln fuel is burned in the preheated air from the cooling zone. This heat converts the limestone into quicklime and carbon dioxide. Last, the quicklime leaves the calcining zone to be cooled by direct contact with "cooling air."

USING ROTARY KILNS IN LIME PRODUCTION

Rotary kilns account for 90% of lime production in the United States. A rotary kiln consists of a long, cylindrical, slightly inclined, refractory-lined furnace. The limestone and combustion gases pass through the kiln in a countercurrent flow. As the limestone moves down the kiln, the limestone is heated and slowly calcined into lime. The lime is discharged from the kiln into a cooler where it is used to preheat the combustion air. This lime can then be sold or crushed to produce hydrated lime.

VULCAN DRYING SYSTEMS SOLUTION

Vulcan Drying Systems supplies equipment to dry, sort, and move lime. Our team can build a dryer to best fit your specific project needs. Our services include setup, commissioning, training, and maintenance support over the lifetime of a project.

For more information on Vulcan Drying Systems email us at sales@vulcandryingsystems.com or call us at +1 (660) 263-7474.

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