MINERALS TO MATERIALS
THE PROCESS / THE PRODUCT

Quarry
The Clarkdale Plant is surrounded by hills that are rich with high quality limestone that is quarried on site. The quarried rock contains both silica and calcium as well as deposits of volcanic material that provide alumina, iron and additional silica. All of these are necessary to make a suitable raw mix for cement.

Crush
Once quarried, the stone is trucked to the primary crusher where each type of stone is broken down and stored separately. In a secondary crusher, the stones are mixed in the correct proportion and reduced to less than 3-inch sized pieces. During this process, the rock is sampled regularly for quality. After the crushing process, this raw material is stacked.

Reclaimer
A special piece of large equipment, a digger-wheel reclaimer, retrieves the stacked rock to ensure that different types of rock are blended into a uniform feed for the kilns.

Raw Grind
The raw material is ground into a fine powder called raw feed that is sampled for chemical consistency and quality.

Heat
Raw feed is blended in the homogenizing silos and pumped into a preheater/calciner. The feed then drops into a rotary kiln where it is heated to temperatures of at least 2750 degrees F. At these high temperatures, lime, silica, alumina, magnesia and iron oxides form new compounds and produce small, hard, spherical shaped “clinker.”

Finish Grinding Mill
The clinker is cooled and stored in domes. Gypsum is added to the clinker and it is milled to a powder. The powder is cement.

Storage
Portland cement, mortar cements, and specialty grinds are pumped into storage silos on site.

Packed & Distributed
Bulk and bagged cement is distributed throughout central and northern Arizona. The location of the Clarkdale plant near the center of the state is convenient to the growing metropolitan area making concrete readily accessible and construction more affordable.

A few of the projects built with Phoenix Cement® include Glen Canyon Dam, the Central Arizona Project, Chase Field, Roosevelt Dam, I-10 and I-17 construction, Phoenix Sky Harbor International Airport, The Pavillions Shopping Center, Mingus Union High School, the Palo Verde Nuclear Generating Station, numerous high rise structures and housing developments throughout the Phoenix metropolitan area and Northern Arizona.
Mission Statement
Creating Opportunities and Solutions with Quality Products and Exceptional People

Values
Profitability The Right Way... Integrity, Accountability, Excellence

Process Flow in Cement Manufacturing

1 Quarry
2 Primary Crusher
3 Surge Piles
4 Secondary Crusher
5 Analyzing
6 Stacking & Reclaiming
7 Raw Grinding
8 Blending
9 Preheater
10 Kiln
11 Clinker Cooler
12 Clinker Storage
13 Cement Grinding
14 Cement Silos
15 Cement Loading