

the Pozzolanic Reaction

2

Replacing some of the Portland cement with natural pumice



1

In curing concrete, the same hydration reaction that generates Calcium Silica Hydrate (CSH)—aggregate-binding glue—also spawns junk Calcium Hydroxide (CH) which not only does nothing to contribute to concrete strength and density, but actively works against it.



Pozzolan ignites a pozzolanic reaction within the hydrated concrete paste that consumes trouble-making CH and converts it into additional CSH.



3

The additional CSH does what you'd expect: makes the concrete or cementitious grout stronger, denser, and more enduring.



$Ca(OH)_2 + H_4SiO_4 \rightarrow Ca_2 + H_2SiO_4 \cdot 2 H_2O \rightarrow CSH$