

EMC SQUARED® SYSTEM

ADVANCED SOIL STABILIZATION SAVES MONEY!



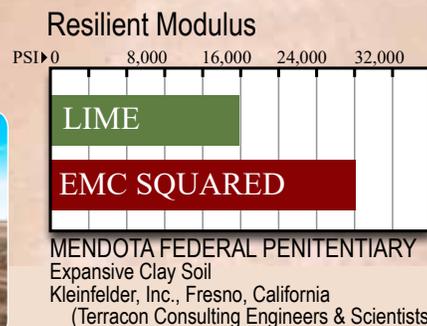
Application



Mixing



Compaction



In order to develop the most economical road design for the first phase of a large federal penitentiary project in California, engineers used the AASHTO 2002 Mechanistic - Empirical (M-E) Pavement Design methodology promoted by the Federal Highway Administration (FHWA). With over fifteen acres of paved road and parking lots to be constructed on top of highly expansive clay soils, older design methods would have required thick layers of aggregate base rock hauled from over thirty miles away. Design engineers utilized Resilient Modulus testing to carefully evaluate an alternative base layer design constructed of stabilized soil. Interestingly, while design engineers assign aggregate base rock a resilient modulus value of 25,000 psi to 30,000 psi, test results for the clay soil stabilized with the EMC SQUARED® System treatment were 32,000 psi. The advanced liquid stabilizer products, applied as compaction water additives, can make major improvements in soil stability at the lowest possible cost.

The high performance stabilized layer remained in service for over two years without protection from the planned asphalt pavement. Federal budget problems delayed funding for the second phase of the project, which included the asphalt paving work. The building contractor operated heavy truck and construction equipment for this \$100 million first construction

phase through wet winter and spring conditions without need for repair of the stabilized roads and parking lots while the rest of the construction site remained impassible due to the saturated heavy clay soils. The stabilized surfaces retained their stability and bearing strength with nothing more than two inches of aggregate spread on top as an all-weather traction layer.

Lime treatment was also considered as it offered large savings over importing aggregate base rock, but the EMC SQUARED System stabilization treatment was selected as it provided superior performance in testing and additional savings of approximately \$250,000.00 over lime treatment. With costs for imported aggregate running approximately eight times as much per cubic yard as the EMC SQUARED System stabilization product used with the native soils, there were major cost savings over the original aggregate base road design. Use of the EMC SQUARED System stabilization treatment replaced approximately 30,000 tons of aggregate base rock and approximately 1,200 diesel truck trips of sixty miles roundtrip. In addition to cutting project construction costs, this advanced soil stabilization treatment also reduced the traffic safety hazard and the road damage associated with the heavy truck haul, and eliminated the air pollution related to 1,200 truck trips through California's San Joaquin Valley, a basin contending with extreme air pollution problems.

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