

Winterization of Subdivision Roads



Pictured here are subdivision aggregate base course materials treated earlier in the day with the EMC SQUARED System stabilizer treatment. Moisture content of treated aggregate was above the optimum moisture content for the treated aggregate as pictured and the contractor halted operations for the day after rough grading and preliminary compaction. Winterization of the base course materials was completed the following day as the aggregate dried back suitably for final compaction and fine grading operations.

Wet winter weather shuts down many construction projects as construction sites become muddy. Roads and streets not yet fully constructed become impassable. Residential subdivisions are particularly challenging with multiple building locations often spread out over very large sites. With underground utility excavations in the road, street easements often yet to be completed, and heavily loaded trucks (such as concrete mixer trucks) using the roads on a daily basis, there is good reason to delay construction and placement of the asphalt or concrete pavements. Nevertheless, in regions where construction is not completely shut down by winter snows, developers still plan to continue construction. Stable roads are a necessity to transport crews and building materials to the construction site. Fire Marshals with jurisdiction also demand that all-weather roads be provided once construction of building, homes or other structures begins.

While California is famous for its Mediterranean climate, periods of heavy winter rains often make construction sites impassable. The expansive clay soils in areas of Contra Costa County, located on the east side of San Francisco Bay, are particularly problematic. These clay or “adobe” soils often have very low bearing strength and pavement designs require thick aggregate base rock and pavement structural section layers to compensate for the soft subgrade conditions. When it comes to unpaved roads, aggregate and gravel materials placed on top of these soils are rapidly “swallowed” by the clay subgrade in wet conditions. The



subgrade fails to provide support and “pumps” up into the overlying aggregate under heavy trafficking. The costs for temporary roads of this nature are extremely high and they fail to satisfy Fire Marshal inspections or provide satisfactory service for construction operations.

Pictured here is a subdivision project in San Ramon, California, where aggregate base materials were “winterized” with **EMC SQUARED**® System stabilizer treatment. The stabilized aggregate materials supported winter construction traffic and helped shed water off and away from the road structural section, effectively “capping” the expansive clay soils underneath the stabilized aggregate until the final phase of construction when asphalt pavement surface courses were placed and proper drainage established to flow water into the concrete gutters and storm drain systems.

A neighboring project experienced similar success in capping an expansive clay subgrade on a section of Norris Canyon Road. An **EMC SQUARED** Stabilized Aggregate surfacing was placed during realignment and reconstruction of a section of the road tying in to the subdivision entrance area. The developer of the subdivision also used the **EMC SQUARED** System treatments to stabilize dirt roads and gravel roads on an “as needed” basis within the subdivision to maintain access to home construction sites through a very wet winter.

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