

Sustainable Car Parks and Compounds with RoadCem Zeolite Soil Concrete.



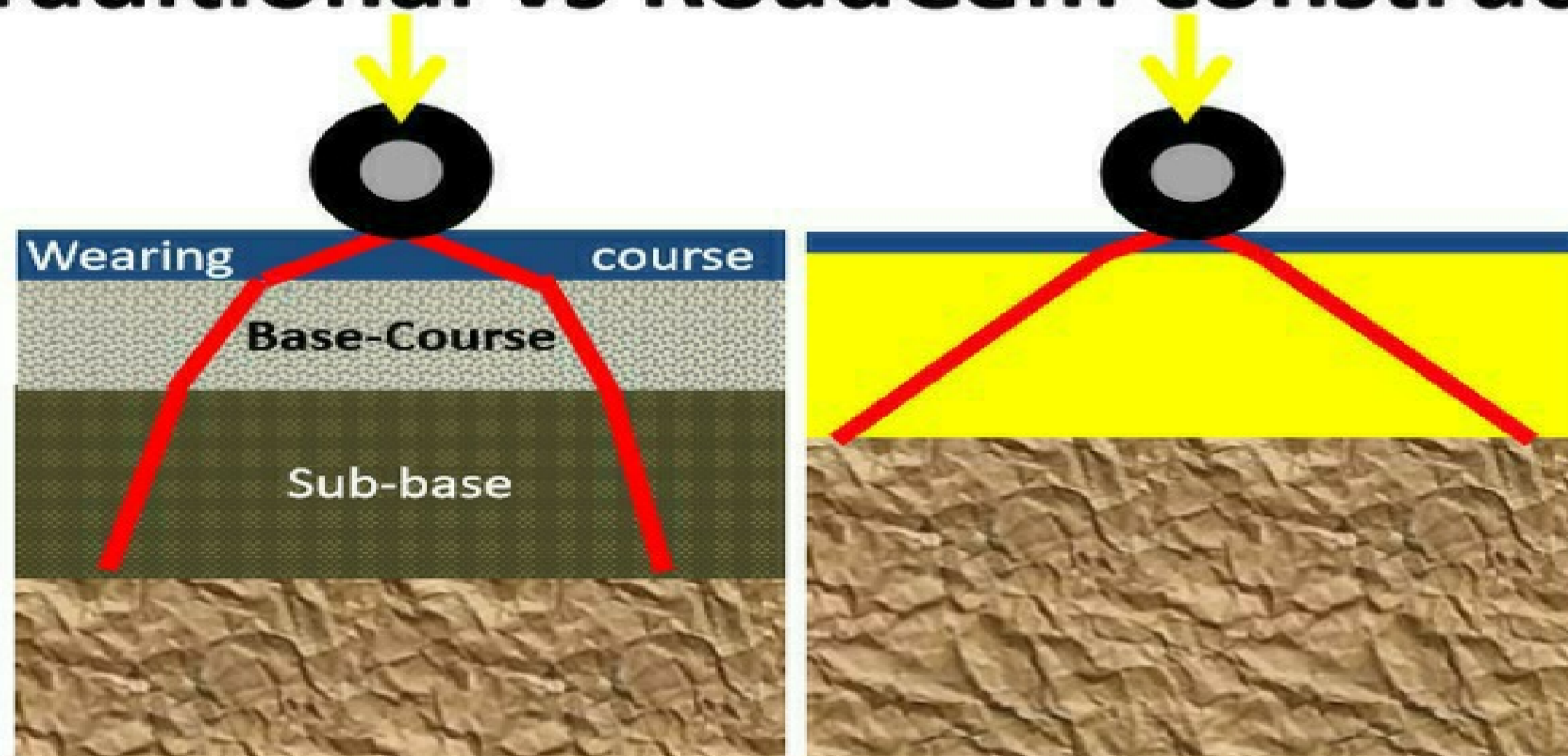
Car parks and working compounds can be built with long term strength and durability, using just the existing soils on site. The photo alongside, shows an un-surfaced RoadCem stabilised soil compound after eight years use. You can also bind a thin asphalt wearing layer to this RoadCem base, and you have a really cost effective car park and/or compound, that can be kerbed, marked up and drained to fall.

RoadCem is a cement modifier and is designed to ensure that cement works effectively with soils of all types. In order to improve bonding, RoadCem increases crystal formation. These grow long, wrapping around the soil particles, filling voids and expelling any free water from the stabilisation. This results in a compound or car park base with a high modulus of elasticity, resistant to cracking and damage by frost. Which will require little maintenance for the lifetime of the application.



After two years of construction use, the RoadCem soil stabilised haul road was cleaned and given a tar and chip finish.

Traditional vs RoadCem construction



Point loading is spread over a larger area of the sub-base, reducing the impact of loadings on the sub-soils.

RoadCem has been used to construct car parks and compounds of up to 150,000 m² in size. With around 2,000 m² per day achievable with one team. The stabilisation should, subject to testing, be ready for use after 48 hours. Any type of site soil can be used to form the base, including in-situ topsoils. So no site strip need, just a quick clearance of vegetation.



Five years later, the site roads have lost their tar and chip surfacing.

In summary; RoadCem design car parks and compounds are cheaper to build and maintain and are truly sustainable, with zero virgin stone and little trucked to site, they can reduce CO₂ emissions by 80%.

80,000 m² In-Situ Stabilised Soil Car Park for Toyota Automotive, Derby



Constructed in-situ to a depth of 300 mm from the existing alluvial soils. With a 30mm asphalt surface. This innovative bound topsoil platform could in fact have functioned effectively as a car storage area without the need for any protective surface. With a soil mix design of 5.78% OPC and 0.06% RoadCem by weight. Early 3 day Compressive strength was 3.3 N/mm² rising to 4.0 N/mm² after 7 days.

After thorough testing Toyota agreed with their main contractor Whitehouse Construction, that the large cost and construction savings made available by treating the existing site alluvium soils with RoadCem justified the innovative design provided by Rodgers Leask consulting engineers of Derby.

Constructed without any shrinkage/expansion joints and no drainage this 80,000 m² soil concrete sub base was bonded directly to the thin asphalt running surface to give a long life durable maintenance free car park.

Large sustainability savings were made and CO₂ emissions would have been 174% higher with a traditional car park design.



Designed to falls with no integral drainage, a peripheral filtered drainage channel was constructed around the site.

600,000 m2 RoadCem in-situ soil car parking area for General Motors Mexico



The city of Queretaro, in Queretaro State is located in the central part of Mexico, 200 km northwest of Mexico City.

Because of its location and characteristics, Queretaro is an important industrial city where they are located about 18 industrial parks with over 4.639 industries that supply much of the country.



General Motors determined the suitability of RoadCem in this project because of its unsurpassed durability features, low maintenance and fast construction process. In this work, because of the dry and mild climate the client opted for a traditional chip & spray on the stabilization, demonstrating once again that PowerCem Technologies products whilst compatible with traditional construction methods are more durable and cost effective.



Early in 2017 after four years service an inspection of the car storage area showed little damage, just some wearing of the chip and spray in the transit lanes which was simple to rectify.