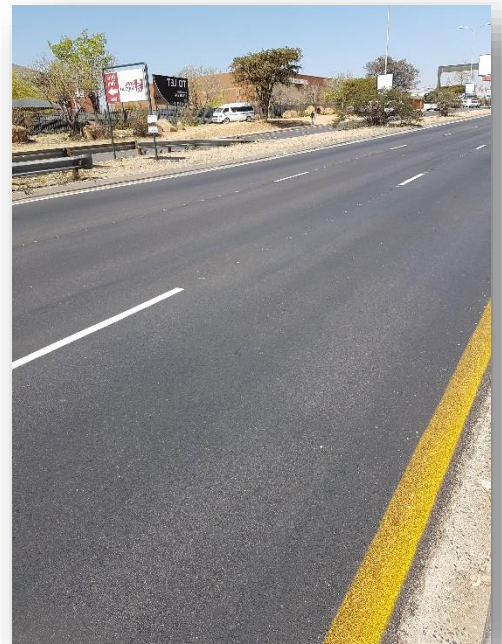




OVERVIEW

Bitumen emulsion is a liquid that when mixed with particulate material binds it together, improving its strength and water resistance. Over the past 60 years bitumen stabilization of particulate materials has shown it can be a durable method of improving the engineering properties of road construction gravels as use for road base course. As crushed stone and good quality gravels are non-renewable resources it is important to use them optimally to avoid creating significant future problems.

There are three kinds of stabilization that have been successful historically, namely cement, lime and bitumen. All of these products have known test methods and failure mechanisms, all of these products also significantly increase the wet strength of stabilized aggregates. There have also been **over 40 alternative products** marketed for stabilization (polymers, enzymes, ionic exchangers, etc.) on the market that **do not improve the wet strength** of the aggregates and as such **cannot be tested or classified according to established engineering methods**.



Regarding the use of new road building products **The South African National Roads Agency Limited's South African Pavement Engineering Manual (2013 edition)** says:

"It must be clearly stated that, other than those products based on and including traditional stabilizers (cement, bitumen, and lime), none of the proprietary chemical stabilisers currently marketed produce strengths equivalent, or even close to, those produced by the conventional soil stabilisers." - SAPEM 2013, Chapter 4, Section 6.2.

Ecobond is a **unique** proprietary modified bitumen emulsion which is used in road construction projects. The bitumen emulsion is modified for various purposes using a synthetic resin. This modified bitumen emulsion is mixed with water on site and usually applied at ambient temperature using a tanker truck (e.g. water tanker). Ecobond optimizes the use of non-renewable resources such as