



## MicroPolymer™ - Soil Stabilization Solutions



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# MicroPolymer™ - Soil Stabilization Solutions

## Proven Soil Stabilization Solutions

ROSTAC-V™ Engineered Formula, part of the MicroPolymer™ Soil-Stabilizer family of polymer emulsions for road construction and stabilization, creates an impenetrable, durable surface with superior compressive strength.

ROSTAC-V™ MicroPolymer Engineered Formula for dust control and soil stabilization boasts more certifications and verifications for environmental safety and performance effectiveness than any other polymer emulsion.

## Build or Stabilize Roads to be Hard as Steel or Resilient as Rubber

Soil-Sement Engineered Formula is a high performance, critical application polymer emulsion designed to give exceptional dry strength and exceptional wet strength properties.

ROSTAC-V™ MicroPolymer Engineered Formula increases the load-bearing strength of all types of surfaces. As part of the design, ROSTAC-V™ provides complete engineering services including laboratory analysis of native soils and materials, and product volumes, optimum moisture determination, water mix ratio, and blending design to provide optimum compaction and desired density and strength.

MicroPolymer™ Soil-Stabilizer Formula's nanotechnology formulation enables our scientists to control matter on an atomic and molecular scale, taking into account dry strength, wet strength, ductility, elasticity, UV resistance, climate, and many other factors. It has been proven the most effective – and cost-effective – for stabilization projects all over the globe.



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### **ROSTAC-V Engineered Formula Benefits:**

- ◆ Creates an engineered stabilized 7- to 25-cm road layer which will resist shifting, breaking up or sink failures.
- ◆ Increases load-bearing strength of all types of soils and surfaces
- ◆ Stands up to traffic, loading abuses and extreme temperatures
- ◆ Reduces need for road maintenance
- ◆ Increases fuel efficiency and higher productivity
- ◆ Environmentally safe, non-toxic, non-corrosive, non-flammable and does not pollute ground water
- ◆ Offers maximum weather ability to wind, rain ultraviolet light and other weather conditions



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## MicroPolymer™ - Soil Stabilization Solutions

**ROSTACT-V proved increase 650% of CBR value on Malaysia's laterite soil**

NO	LOCATION	DIRECTION	TYPE OF LAYER	CIV	CBR VALUE ( $0.24 \times (\text{CIV}) + 1$ ) <sup>2</sup> ( % )
<b>( BEFORE )</b>					
1	Pts. 1	-	Normal	10	11.6
	Pts. 2	-	Normal	15	21.2
	Pts 3	-	Normal	12	15.1
<b>( AFTER )</b>					
1	Pts. 1	-	Stabilize by Rostac-V	46	145.0
	Pts. 2	-	Stabilize by Rostac-V	39	107.3
	Pts 3	-	Stabilize by Rostac-V	39	107.3

*Tested by IKRAM Paves SB, Malaysia in Tebong, Melaka ( December 2013 )*

### ROSTACT-V Color Application



**Black**

*Road / Sidewalk / Car park*



**Green**

*Slope protection / Garden / Landscaping*



**White**

*Special Road / Car park / plains area*



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## MicroPolymer™ - Soil Stabilization Solutions

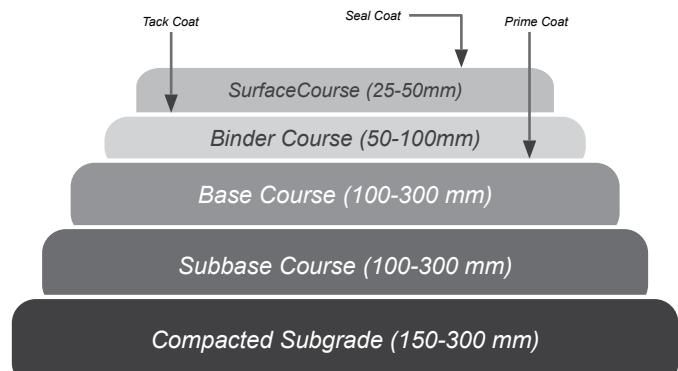


Figure 1: Natural Subgrade

### ROSTACT-V works well with those soil :



Loam



Silt



Sand



Clay



Laterite



Peat



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## MicroPolymer™ - Soil Stabilization Solutions

### ROSTACT-V Functionality :



- Road Work Stabilizer
- Subgrade Stabilizer
- Slope Protection
- Dust Control
- Siltation Control
- Pond Liner
- Aviation Runway
- Train Runway & Platform
- Heavy All-Season Haul Road
- Transport Parking Area
- On-Shore Oil & Gas Drilling Site
- Highway Shoulders
- Landing Pad
- Recreation Park



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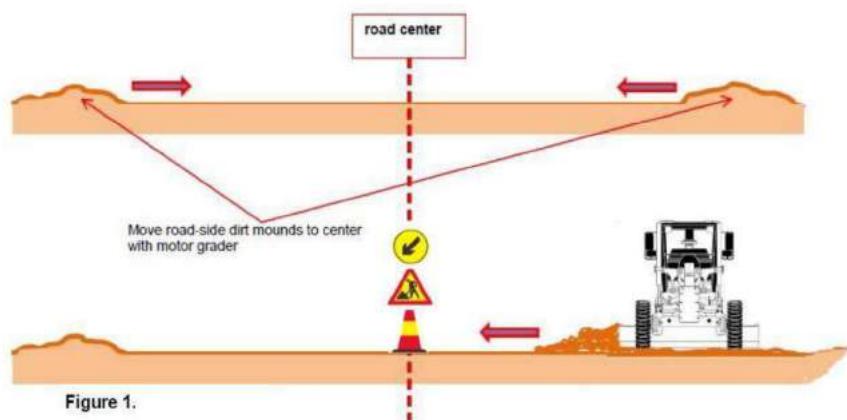
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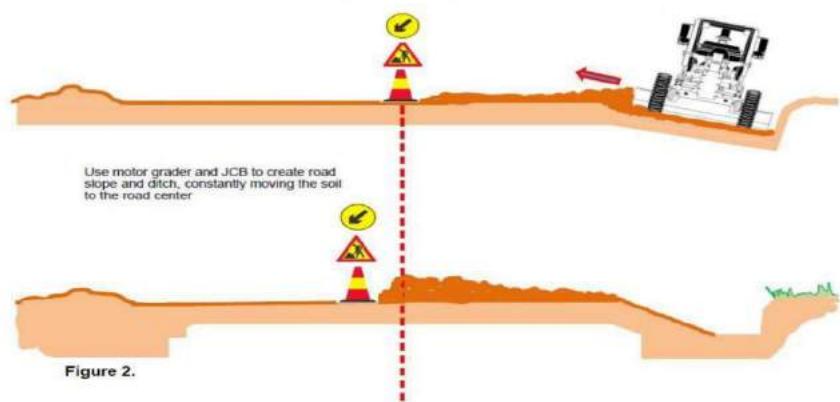
## MicroPolymer™ - Soil Stabilization Solutions

### Methodology

**(Figure 1)**  
*Existing roadway is to be formed and cambered to minimum 3% camber to drain.*



**(Figure 2)**  
*Roadside ditch and slope to be created to specification.*



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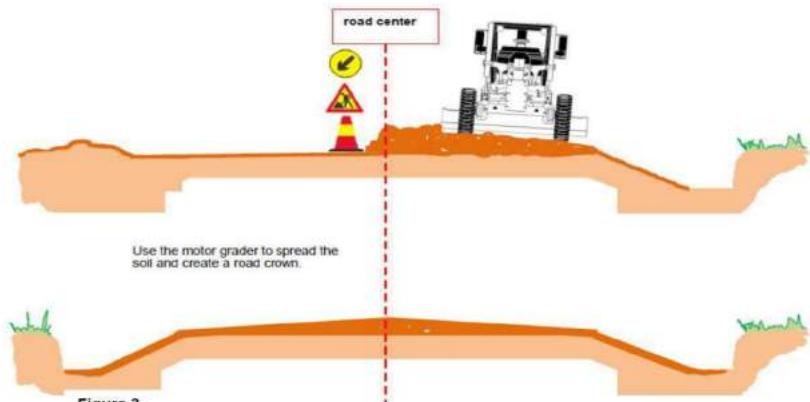
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## MicroPolymer™ - Soil Stabilization Solutions

### Methodology

**(Figure 3)**  
Road crown and 3% camber (min) to be formed.

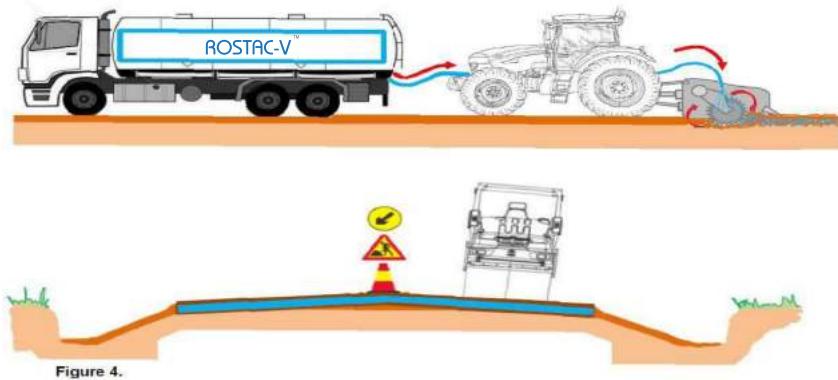


**(Figure 4)**  
A Water truck with diluted Rosctac-V is connected to high-host power MFWD tractor with an FAE MTM Stabilizer Attachment.

The Stabilizer very accurately establishes the depth and rate of application along with an intensive mixing zone of polymer and soil.

The milled and mixed materials are then compacted to a minimum of 95% standard proctor.

Rosctac-V to be applied via stabilization machine or using motor grader and water truck depending on machinery availability in road location and compacted to 95% compaction with a 25 ton vibro compactor.



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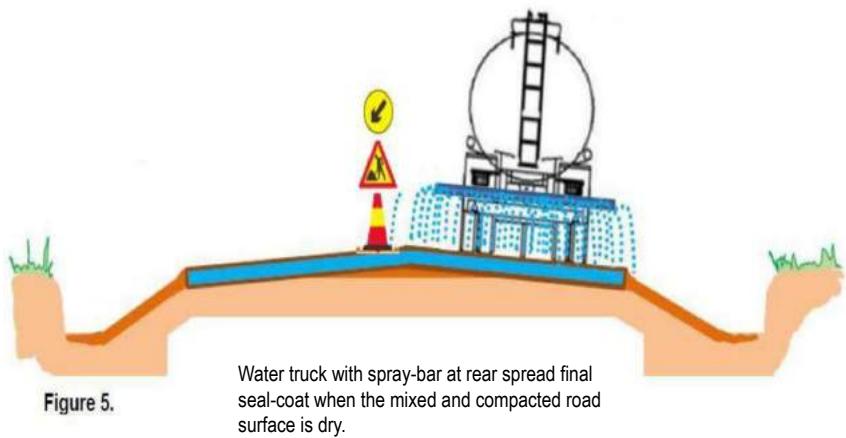
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# MicroPolymer<sup>TM</sup> - Soil Stabilization Solutions

## Methodology

**(Figure 5)**  
Rosctac-V to be applied in 2 separate finish coat with sufficient curing time in between.



## Maintenance

Rosctac-V to be sprayed on in 1 layer maintenance application approximately every 2 to 3 years at approximately 20% the installation cost.



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# MicroPolymer™ - Soil Stabilization Solutions

## Product Warranty

1. Rosctac-V™ Polymer Statement of Properties.
2. We confirm that Rosctac-V™ is a special, proprietary formulation, of a water based Acrylic cross linking polymer containing the following properties:
3. The stabilizer being applied properly will comply with the requirements of AASHTO standards for road/soil stabilization.
4. The stabilizer, while in its undiluted liquid state, will withstand at least five (5) freeze-thaw tests and retain its chemical properties.
5. The stabilizer, when cured, has a temperature tolerance range from -57°C to + 163°C = (-70°F to + 325°F).
6. The stabilizer performs in high Ph and low Ph soils; it is 'environmentally friendly'.
7. The stabilizer increases the load bearing capability of on-site sub-soils.
8. The stabilizer repels water during, and after the curing process and will resist water runoff during construction in the event of rainfall.
9. The polymer in unopened drums has a shelf life of 24 months; agitation is required prior to use.
10. The stabilizer can be installed with common road building/agricultural machinery (as project applicable).
11. The stabilizer has good resistance to ultraviolet damage and has the ability to be blended to contain additional ultraviolet protection, if required, to increase its surface characteristics.
12. The stabilizer can be blended with fresh water. Salt water is not recommended.
13. The stabilizer contains the unique ability to "bond back to itself"; providing a permanent bond, free from any delaminating or separation risk.
14. The stabilizer has penetration capabilities from surface spray application to bind and seal the surface to contain dust and preventing the ingress of surface water.
15. The stabilizers are capable of sealing, making inert, re-aligning particles of clay (such that they become inert) and can be utilized within soils where high clay content exists and be compatible with the polymers in binding and sealing into a stabilized soil layer.
16. The stabilizers have the properties of, once cured, being irreversible and thus the integrity of the product is retained indefinitely.
17. In the event of rainfall during installation of the stabilizers, the stabilizers are capable of retaining their properties, and are re-workable to bond and seal the soil without any significant loss of strength or water resistant properties.



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ROSTAC-V™

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