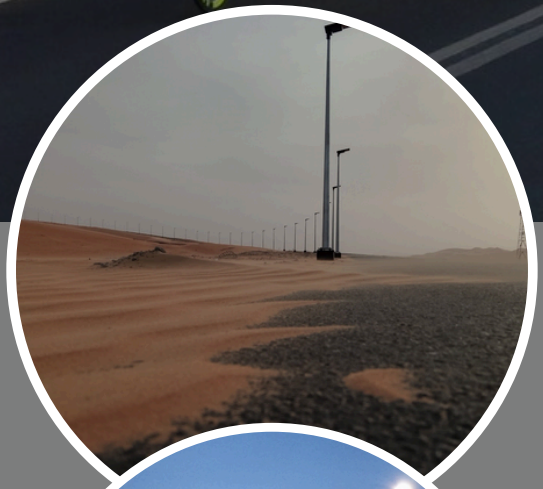
PMCO™

RSS & DSS

Dune Sand Soil Stabilization Solutions

Eco-friendly solutions that blend precision, performance, and environmental responsibility.



SPECIAL FEATURES

- ✓ Structural Stability: Reinforces Dunes & Control Dune Sand Collapse.
- ✓ Wind & Soil Protection: Shields Against Migration & Resists Wind-Driven Sand Movement and Erosion Control.
- ✓ Accident Prevention: Reduces Risks & Enhances Safety on Sand-Covered Surfaces.
- ✓ Cost Savings: Minimizes Maintenance and Ensures Affordability Over Time.
- ✓ Adaptable: Suitable for Existing and New Dune Sand.
- ✓ Fast Application: Quick Construction for Immediate Impact.
- ✓ Aesthetics Preservation: Balancing Development with Natural Beauty.

ARABIAN ROAD TECHNOLOGY

Arabian Road Technology LLC-FZ - Dubai - United Arab Emirates

+971 56 499 3260 | +971 54 773 1171 | info@arabianrt.com | www.arabianrt.com

INTRODUCTION

Understanding Dune Sand
Dune sand, a result of wind-blown sand accumulation, is a prevalent geological feature. Typically formed in arid regions, dunes are composed of fine, loose sand particles susceptible to wind erosion.

Importance of Dune Sand
Dune sand plays a crucial role in ecosystems, contributing to biodiversity and supporting unique flora and fauna. However, its loose structure poses challenges in construction, agriculture, and land use.

Dune Sand and Dust Storms
Dust storms often originate from disturbed dune sand, impacting air quality and causing environmental hazards. Unstable dune sand contributes to the severity and frequency of these storms.

Disadvantages of Unstable Dune Sand
Unstable dune sand poses risks to infrastructure by covering roads and populated areas. The migration of sand particles can lead to increased maintenance costs and safety concerns.

Collapsing Dune Sand:

1. Definition:
• Collapsing dune sand refers to the phenomenon where sand dunes lose their stability and structure, often resulting in the collapse or slumping of the dune.

2. Causes:
• Oversteepening: If the angle of the dune slope becomes too steep, it can lead to instability and collapse.
• Human Activities: Construction, recreational activities, and other human interventions can disturb the natural stability of dune systems, leading to collapse.

3. Effects:
• Loss of Habitat: Collapsing dunes can result in the destruction of habitat for various plant and animal species adapted to dune environments.
• Increased Erosion: Once a dune collapses, the exposed sand is susceptible to wind and water erosion, further impacting the surrounding landscape.

Who we are:

Arabian Road Technology (ART) LLC FZ, based in the UAE, is dedicated to environmental preservation through innovative products that exceed international standards. Incorporating Canadian and German technologies, our products undergo rigorous testing at accredited labs. We manufacture our products in UAE, utilizing regional raw materials to overcome logistical challenges and contribute to a sustainable supply chain.

Third party
Sample analysis

Third party
Sample collection

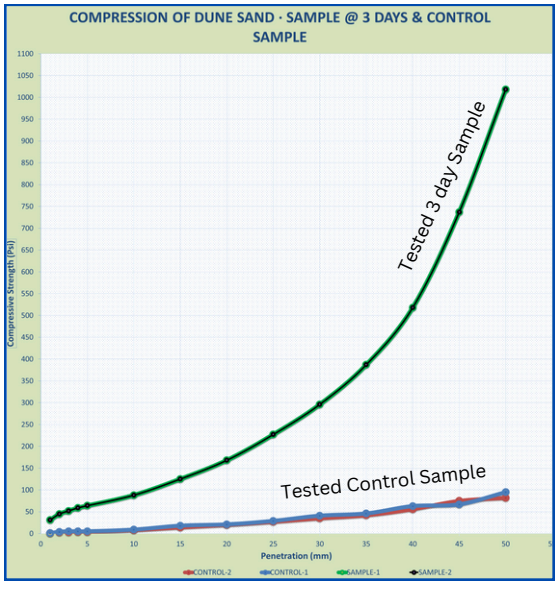
Art approach for Stabilizing Dune Sand Effectively

ART excels in stabilizing dune sand with our innovative approach, addressing its impact on infrastructure and the environment. Our key components, PMCO-RSS (Dry Mix) and PMCO-DSS (Liquid Dispersion), undergo rigorous testing in accredited soil laboratories in the UAE and Germany. Randomly collected field samples, subject to third-party accredited laboratory regress testing, ensure efficacy and safety beyond international standards. Lab results guide a comprehensive field test, aligning and validating our commitment to delivering effective and environmentally conscious solutions.

PMCO-DSS
Testing

PMCO-RSS
Compression Testing

In the Gio Science Lab, Dune Soil Stress Test conducted over a 3-day period, the tested sample exhibited exceptional resistance to pen penetration, reaching a maximum stress of 1000Psi/6.9MPa at 50mm, as indicated by Graph (a). In contrast, the control dune soil test showed a peak stress of 92Psi/0.64MPa at the same 50mm penetration depth.



Method of Statement for Dune Soil Stabilization with PMCO-RSS and PMCO-DSS:

This method statement outlines a systematic and professional approach to dune soil stabilization utilizing PMCO-RSS and PMCO-DSS, incorporating post-stabilization sampling and analysis for a comprehensive long-term performance evaluation.

Preparation
Initiate the stabilization process by soaking the designated deep slope dune area meticulously.

Area Division
Divide the saturated area into uniform square meter (M2) blocks, considering precise quantities of PMCO-RSS per bag and PMCO-DSS per liter.

Application of PMCO-RSS
Uniformly spread dry PMCO-RSS mix across each block area.

Mixing
Thoroughly integrate dry PMCO-RSS mix with dune soil to the desired depth, utilizing milling machines for a comprehensive and uniform blending process.

Application of PMCO-DSS
Apply PMCO-DSS dispersion solution based on pre-designed data.

Compaction
Employ heavy tamper tools to tap the wetted area, achieving leveling and firm packing.

Sampling for Analysis
Take random field dune sand samples at 3, 7, and 14 days at-stabilization, for penetration and stress analysis.

Curing
Allow the stabilized area to undergo recommended curing, considering environmental conditions and specific characteristics of the dune soil.

Documentation
Maintain detailed documentation, including quantities of PMCO-RSS and PMCO-DSS applied, mixing procedures, compaction details, and results of penetration and stress analysis, ensuring project transparency and serving as a valuable reference for the future

Application
Can be applied manually or automatically using standard construction equipment.

Accreditation
PMCO-RSS and PMCO-DSS have been rigorously tested and accredited in the laboratories of:
- Wacker Chemical Laboratory–UAE
- Gio Science Lab–UAE

Packaging
- PMCO-RSS: 25KG/Bag, 1000KG/Bulk
- PMCO-DSS: 20L, 205L, 1000L

Storage
Keep the product in a cool, dry area.

ARABIAN ROAD TECHNOLOGY
Arabian Road Technology LLC-FZ - Dubai - United Arab Emirates
+971 56 499 3260 +971 54 773 1171 info@arabianrt.com www.arabianrt.com

Method of Statement for Dune Soil Stabilization with PMCO-RSS and PMCO-DSS:

This method statement outlines a systematic and professional approach to dune soil stabilization utilizing PMCO-RSS and PMCO-DSS, incorporating post-stabilization sampling and analysis for a comprehensive long-term performance evaluation.

Preparation
Initiate the stabilization process by soaking the designated deep slope dune area meticulously.

Area Division
Divide the saturated area into uniform square meter (M2) blocks, considering precise quantities of PMCO-RSS per bag and PMCO-DSS per liter.

Application of PMCO-RSS
Uniformly spread dry PMCO-RSS mix across each block area.

Mixing
Thoroughly integrate dry PMCO-RSS mix with dune soil to the desired depth, utilizing milling machines for a comprehensive and uniform blending process.

Application of PMCO-DSS
Apply PMCO-DSS dispersion solution based on pre-designed data.

Compaction
Employ heavy tamper tools to tap the wetted area, achieving leveling and firm packing.

Sampling for Analysis
Take random field dune sand samples at 3, 7, and 14 days at-stabilization for penetration and stress analysis.

Curing
Allow the stabilized area to undergo recommended curing, considering environmental conditions and specific characteristics of the dune soil.

Documentation
Maintain detailed documentation, including quantities of PMCO-RSS and PMCO-DSS applied, mixing procedures, compaction details, and results of penetration and stress analysis, ensuring project transparency and serving as a valuable reference for the future

Application
Can be applied manually or automatically using standard construction equipment.

Accreditation
PMCO-RSS and PMCO-DSS have been rigorously tested and accredited in the laboratories of:
- Wacker Chemical Laboratory–UAE
- Gio Science Lab–UAE

Packaging
- RSS: 25KG/Bag, 1000KG/Bulk
- DSS: 20L, 205L, 1000L

Storage
Keep the product in a cool, dry area.

ARABIAN ROAD TECHNOLOGY
Arabian Road Technology LLC-FZ - Dubai - United Arab Emirates
+971 56 499 3260 +971 54 773 1171 info@arabianrt.com www.arabianrt.com