

# TERRA TOP-SEAL WHITE™

# TERRA TOP-SEAL BLACK™

## APPLICATION MANUAL



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in El Paso, TX USA

This manual is intended to assist customers in understanding and working with Terra Pave products for pavements. It describes types of equipment, process and recommendation of aggregates.

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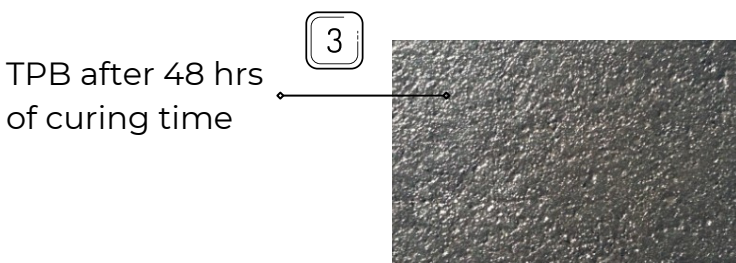
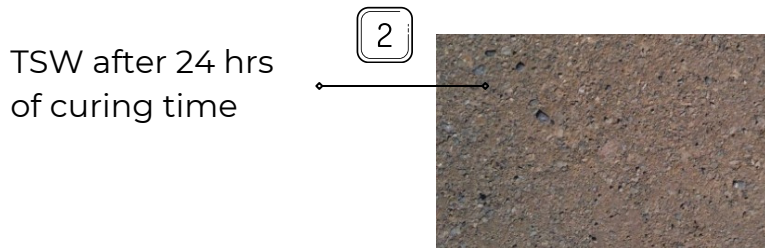
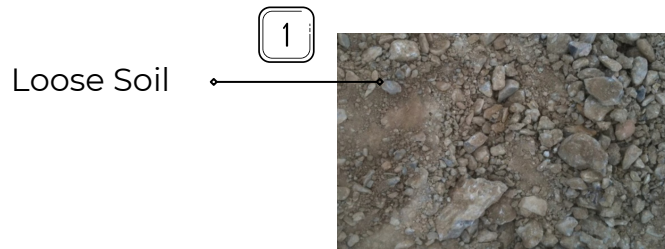
# TERRA TOP-SEAL WHITE™ & TERRA TOP-SEAL BLACK™

Terra Top-Seal White™ (TSW) is all-purpose environmentally-friendly liquid soil stabilizer and additive that bind and transform the base into a solid, yet flexible mass that resists fracturing. It prevents base failure, dust pollution and soil erosion, and it increases soil strength and reduces its permeability. It can be used as a stand-alone for upgrading paved and unpaved road stabilization.

Field-testing with the Texas Department of Transportation has revealed that Top-Seal White's strength is comparable to that of cement stabilization. Other tests have shown that its resistance to moisture significantly exceeds Environmental Protection Agency standards.

Terra Top-Seal Black™ (TSB) is a polymer-based emulsion asphalt replacement pavement, evaporating only water during the curing process and emitting no volatile organic compounds (VOCs).

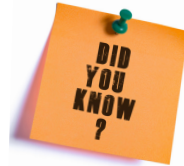
TSB forms a layered coating over the road base that rapidly transforms into a hardened, independent surface. It also increases surface friction, thereby shortening braking distance. After it has been applied and has hardened (polymerized), it creates a thick membrane coating, which prevents the penetration of water and air into the pavement.



# TERRA TOP-SEAL WHITE™ & TERRA TOP-SEAL BLACK™

TSW and TSB consist of a revolutionary combination that offers a high-quality, environmentally friendly, and cost-effective alternative to the traditional harmful concrete/lime base and asphalt pavement, which produce a potent greenhouse gas, carbon dioxide. They do not contain solvents or cause damage to roads or vehicles. They're easily applied, requiring no special equipment or handling procedures.

## **TSW and TSB JOINTLY ELIMINATE THE NEED FOR AN EXTRA WATERPROOF PRIME COAT, INCLUDING PETROLUEM-BASED MC-30 AND AEP.**



As a result, these sister products not only provide an eco-friendly, long-lasting innovative solution, but they also dramatically reduce the cost and time of constructing unpaved low-volume traffic roads.

### MAIN APPLICATIONS :

- *Aircraft Runways*
- *Base Stabilization*
- *BMX Tracks*
- *Bunker Liners*
- *Cart Paths*
- *Roads*
- *Driveways*
- *Farms & Ranches*
- *Parking Lots*
- *Coal Rail Car Capping*
- *Slope Erosion Control*
- *Helicopter Landing Pads*
- *Heavy Haul or Mining Roads*
- *Hydroseed & Hydro mulch Tackifier*
- *Water Retention Basins & Pond Linings*
- *Hazardous Material Capping & Sealing*
- *Mine Tailings Capping & Reclamation*
- *Landfill Capping & Reclamation*
- *Military Convoy & Tank Trails*
- *Odor & Vapor Suppression*
- *Temporary Roads & Detours*
- *Walking Trails & Paths*
- *Foundations*
- *Shoulders*



**TOP-SEAL BLACK**

**NO MC-30 OR AEP IS NEEDED!!**



**TOP-SEAL WHITE**

# REQUIRED EQUIPMENT

Routine road construction equipment is sufficient for the proper installation. This typically consists of a motor grader, a compactor, and a water truck:

Size of equipment dependent on the size of the job



Motor Grader



Compactor



Water Truck

The compactor can be rubber tire or steel drum, or both, if available. The rubber tire compactor is preferable for initial compaction, and the steel drum works best to finalize treatment into a smooth and even surface. If only a steel drum compactor is on site, then the operation will need to be closely watched to make sure that the treated soil is not sticking to the drum. If this occurs, then more time should be given for the soil to dry out prior to the compaction.

# TOP-SEAL WHITE PREPARATION

TOP-SEAL WHITE™ (TSW) – The product is typically shipped in 275-gallon (1000 liter) totes. TSW can be ordered in any quantity and shipped worldwide. Top-Seal White is a multi-purpose commercial- grade liquid soil additive that can be incorporated into many different types of stabilization projects, and the performance criteria is adjusted simply by increasing or decreasing the application rate.

Amount of product for different applications:

1. Heavy Vehicle/Auto traffic: 0.35 gallon/square yard
2. Light Vehicle 0.25 gallon/square yard
3. No Vehicle/Auto traffic, light traffic, foot traffic: 0.175 gallon/square yard

A front loader, fork lift, or a transfer pump can be used to deliver the product from 275-gallon totes into the water truck.

Aggregates: We recommend the aggregates which work best with Top Seal White™ specified in the following link by Texas Department of Transportation:

<http://ftp.dot.state.tx.us/pub/txdot-info/cmd/cserve/specs/2014/standard/s247.pdf>



Mixing before application for use with the above TXDOT specified aggregates:  
1 part of TSW to 15 parts of water | 1:15 for most pavement applications

# TOP-SEAL BLACK PREPARATION

TERRA TOP-SEAL BLACK™ (TSB) – The product is generally shipped in 275-gallon (1000 liter) totes. TSB can be ordered in any quantity and shipped worldwide.

Amount of product for different applications:

1. Heavy Vehicle/Auto traffic: 0.15 gallon/square yard
2. Light Vehicle 0.10 gallon/square yard
3. No Vehicle/Auto traffic, light traffic, foot traffic: 0.075 gallon/square yard

A front loader, fork lift, or a transfer pump can be used to deliver the product from 275-gallon totes into the water truck.

Mixing before application for use with TSB:

1 part of TSB to 15 parts of water | 1:15 for most pavement application:



# TOP-SEAL WHITE + TOP-SEAL BLACK APPLICATION STEPS

It is crucial to scarify (loosen the soil) as much as possible prior to first application. This will help ensure a deeper and more thorough penetration into the soil base. The soil can easily be loosened with the scarifying teeth of a motor grader prior to making the first application. In rural and farm areas, a disk harrow is often available and ideal for scarifying the soil.

## STEP - 1

100% of TSW and water mixture (with a ratio of 1:15) should be distributed into the soil as evenly as possible with no overlaps and no runoffs. A good spray bar is essential for this part of the operation; a pressurized spray bar is ideal. Blade mixing the product into the soil with a motor grader is also an excellent method for mixing into a soil base. At this point, the product will begin to soak into the soil.

## STEP - 2

The next step is to mix 10% of the total TSB with the calculated water and spray it over the prepared base with TSW.

## STEP - 3

When the TSB has partially disappeared from the surface, the compaction can begin.

• Curing Time •

## STEP - 4

45% of the total TSB should be diluted with a ratio of 1:15 and applied with the second application.

• Curing Time •

## STEP - 5 • FINAL STEP

The final application is an over-coat that acts as a reinforcement or sealant. Within this step, the calculated water and remaining product - 45% of the total TSB should be mixed with water and evenly distributed over the area of coverage and allowed to completely seal the road. It is recommended to wait a day or two prior to allowing traffic for the curing period to harden and better support the sealing properties of the previous application.

The curing time refers to a waiting period until the product dissolves into a layer and is approximately couple of hours on hot summer days. This period may vary slightly due to differences in the weather.

ASPHALT

TERRA TOP-SEAL BLACK



# TOP-SEAL WHITE + TOP-SEAL BLACK APPLICATION PHOTOS

01



Loose soil prepared for application of TSW

02



Preparations completed for application

03



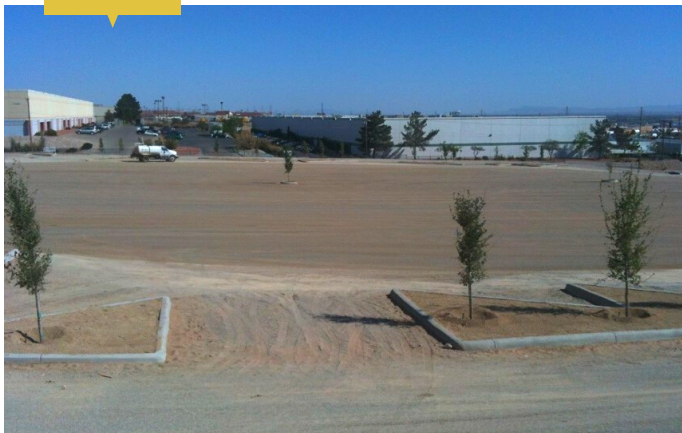
First application of TSW

04



TSW soaking into the soil

05



TSW after 24 hours of curing



# TOP-SEAL WHITE + TOP-SEAL BLACK APPLICATION PHOTOS

05



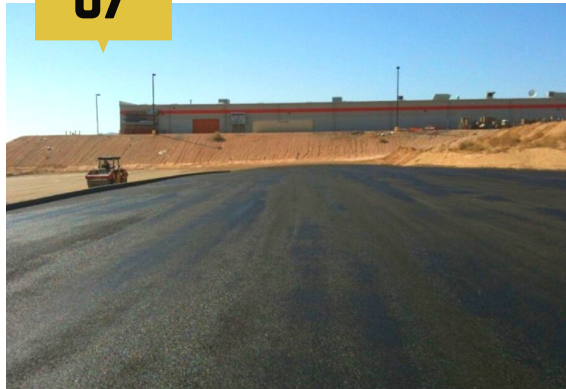
TSW after 24 hours of curing – close up  
Skid marks only leaving a black mark  
on the surface.

06



First application of TSB

07



Final application of TSB

07



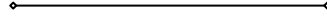
RESULT | TSB close-up after 48 hrs of curing time

# TOP-SEAL WHITE + TOP-SEAL BLACK APPLICATION PHOTOS

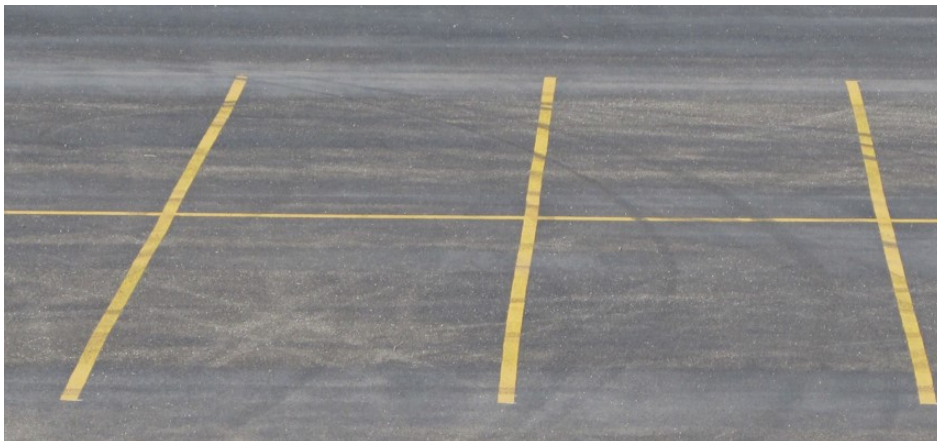
One Week Later



One Month Later



Six Months Later



Terra Pave Black™ was applied in El Paso, Texas. After stabilizing the base with Top Seal White, TPB was applied to give a rich dark black finish resembling asphalt finish. TPB forms a very strong polymer chain to have a durable structure. The site serves as a parking lot and Flea Market for over nine years.

Please contact [info@ecoestates.us](mailto:info@ecoestates.us) to learn more about your application.

**In order to have a better understanding, please check out the video of our past project in South Africa where both TSW and TPB are applied:**



# TPI SPRAY BAR ASSEMBLY KIT



Center piece (4 ft) and two extensions (3 ft each)



5.5 Hp transfer pump (optional)



Intake hose (Color may vary)



Output hose and connectors



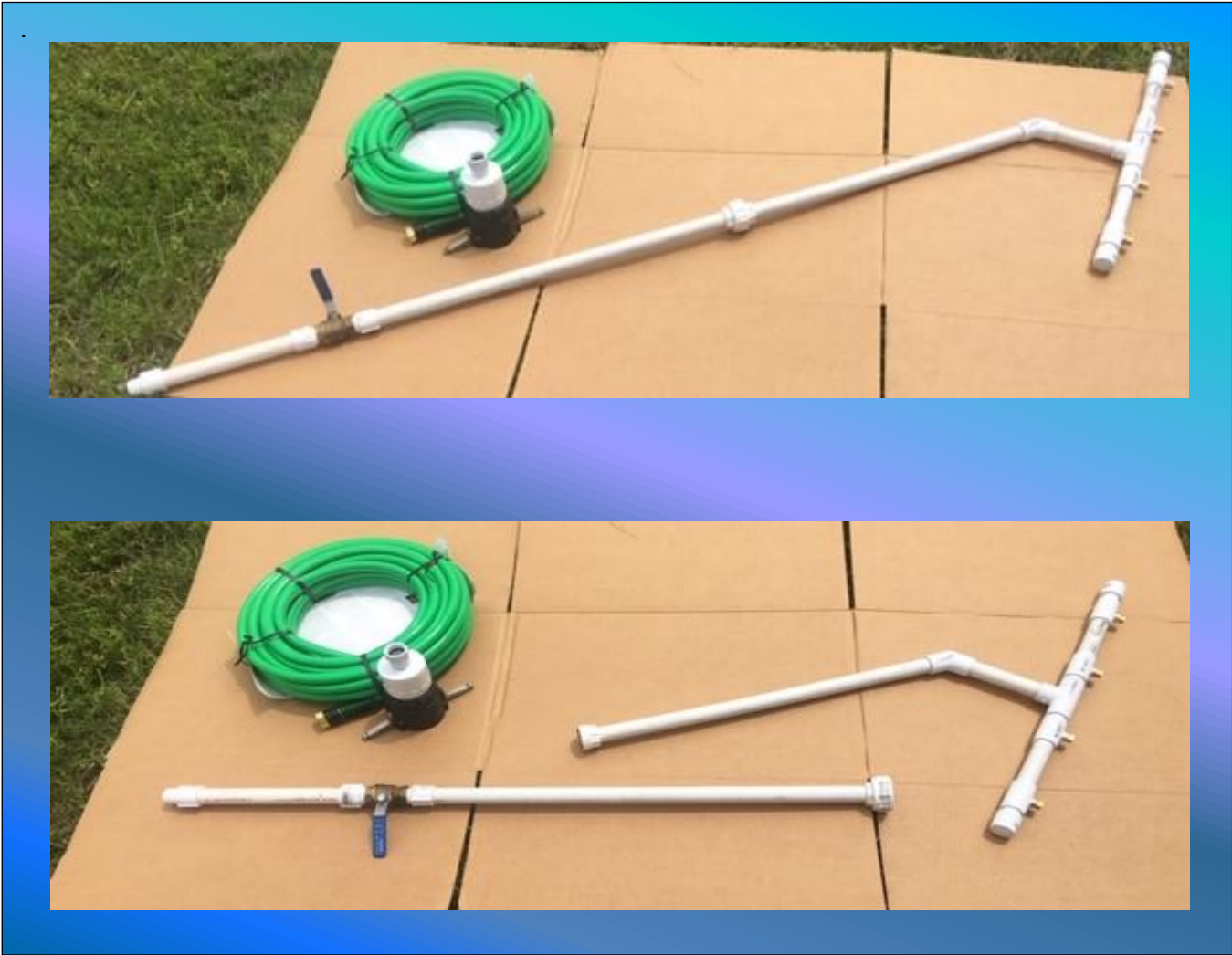
## TPI SPRAY BAR IN ACTION

The bar is placed low to the surface for better penetration. The spray bar provides a very even distribution of TPI products into the area of coverage. Compared to traditional gravity feed or single outlet distribution systems, the efficiency of the TPI spray bar kit pays for itself from the savings of a much more efficient application of TPI products.

**NOTE:** As shown in the photo, plastic ties are provided with the spray bar kit to firmly attach the system to any component of the water truck. The spray bar can be removed simply by cutting off the ties.

# HAND-HELD SPRAY BAR

For Small Projects and Tight Spaces



**TERRA PAVE**  
INTERNATIONAL

