



Advanced Soil Products LLC

Chemical Soil Stabilization
with Soil Binder[®] Graphic Guide

Houston, Texas, USA

SoilBinder® Soil Stabilization

- SoilBinder® is a liquid concentrated soil stabilizer which treats and stabilizes all 17 AASHTO soil classifications except A-8 Peat.
- SoilBinder® is Non Toxic, Non Allergenic, Non Flammable and Non Corrosive
- SoilBinder® reduces the Liquid Limit and Plasticity Index on stabilized soil, increasing UCS and making it impervious to water.
- Conventional AASHTO and ASTM standards are used to evaluate effectiveness.

Surface Preparation

In-situ soil may be used and taken to final elevation

Loaned material does not need to be selected aggregate.



Surface Preparation

Check infrastructure to locate cable and pipelines before construction begins



When recycling old asphalt no previous milling is necessary.



Dry Additive

Dry additive must be spread at the predetermined design rate (2-4%).

Cement, lime, LKD or CKD are the most commonly used additives, based on local availability.



Dry Additive

Spreader applying CKD



Spreader applying CKD



SoilBinder® Dissolved in Water

SoilBinder® is diluted at a rate of 1:32 with sweet water

Each cubic yard of soil requires 14.5 oz of SoilBinder®



SoilBinder® Application

To achieve a uniform distribution of SoilBinder®, water and additive into the base material, a modern computerized injection system is recommended



Homogeneous Mix

The reclaimer mixes the soil, dry additive and SoilBinder® solution at the desired depth.

The mix must reach 98-102% of OMC to achieve maximum density.



Homogeneous Mix

The reclaimer makes the passes necessary to cover the full width of the road

Working speed is about 50' per minute



Compaction

A 12 ton smooth drum vibratory compactor runs behind the reclaimer.

About four passes are enough to reach maximum density



Grading

The motor grader takes care of crowning and final elevation lines

Grading a curve



Sealing

Pneumatic tire rollers seal the base for release to traffic

Sealing is done using pneumatic compactors.



Curing

The bases are released to traffic right after maximum density is reached, minimizing traffic interruption.



Hydrating the base is recommended when working under extremely hot weather or with sandy soils.



Final Results with SoilBinder®

Fully stabilized and impervious to water bases provide an excellent support for any wearing surface.



Automobile and pedestrian traffic start using the road bases only hours after stabilization.



Wearing Surface

Five-Seven days after stabilization the wearing surface is installed.

SoilBinder® provides a sturdy base for any type of wearing surface: Chip & Seal, HMA, Concrete, seal coating, etc.



Wearing Surface

Natural Cold asphalt being installed over a SoilBinder® base in Caquetá, Colombia.



Chip & Seal county road, Jefferson County, TX, USA long lasting and even wearing without peeling, pot holes or cracking.



Machinery and Production Rates

Machinery

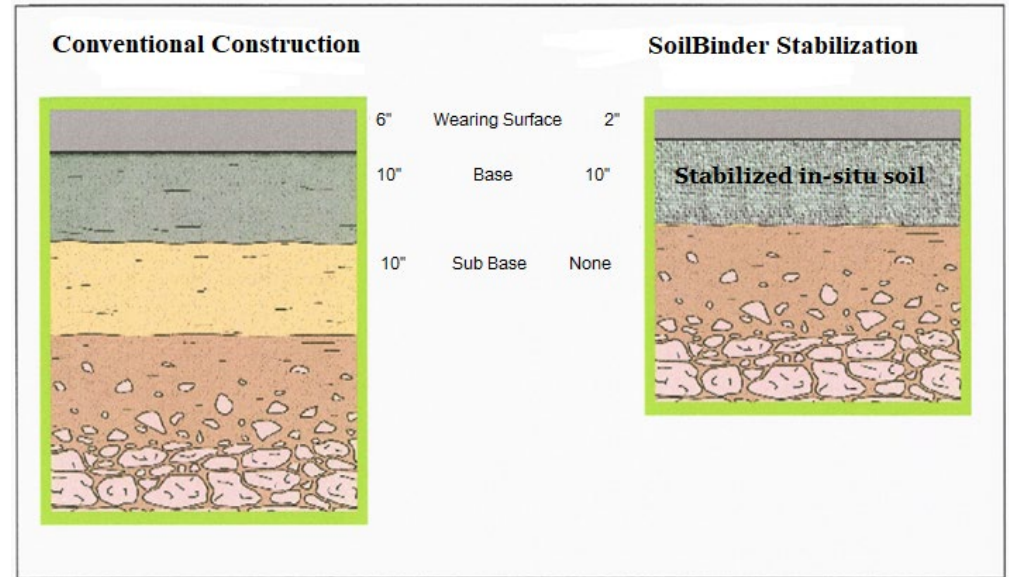
- Reclaimer
- Water tank (2)
- Dry additive spreader
- Smooth drum vibratory compactor - 12 tons
- Motor grader
- Pneumatic compactors

Productivity

- A modern set of machinery with a well trained crew can stabilize about 6,000 SY per 8 hour shift.

Benefits

- Stabilization with SoilBinder® allows the elimination of the subgrade layer on conventional designs.
- Selected aggregates are not necessary any longer.
- SoilBinder®, eliminates the shortcomings of soil-cement's shrink cracking and leaching, decreases the % of cement needed and allows the use of inexpensive materials such as lime, LKD or CKD, while at the same time SoilBinder® opens the range of soils which may be treated such as expansive clay, beach sand, silty sands, vertisoils, etc.
- Thin wearing surfaces have greater longevity over SoilBinder® stabilized soil, and no primers are needed when installing HMA.



Suggested design

- 8" light traffic
- 8-12" medium traffic
- 12"+ heavy traffic



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