

## Landscape Paving Guidelines

### Description

SOILBOND A01 binder is a water-based organic emulsion used for the stabilisation of granitic sand based pavement materials.

Key properties include:

- Increased cohesion;
- Reduced water sensitivity; and
- Improved wet strength.

Granitic sand in these guidelines covers all varieties of finely graded granitic based crushed rocks and gravel including decomposed granite used for landscape paving purposes.

### Product Safety

SOILBOND A01 binder is classified non hazardous and non Dangerous Goods. This means it is safe for handling, storage and transportation. As, with all products, please refer to the Material Safety Data Sheet before use.

### Applications

Wearing course stabilisation with the SOILBOND A01 binder is used to:

- Increase cohesion of granitic sand;
- Provide reduced moisture susceptibility;
- Improve pavement material strength;
- Bind the fine particles to improve dust control; and
- Reduce the problems associated with materials that deform and shove when subjected to traffic.

**Note : Dilute One Part SOILBOND with one .1 part Water Prior to Mixing**

The advantages of SOILBOND A01 bound wearing courses may be in the following applications:

- Pedestrian or cycle trafficked pavements susceptible to mechanical erosion;
- Areas subjected to flooding or rain erosion;
- Dust control improvements for pavements in sensitive areas;
- Improving the load carrying capacity of a pavement; and
- Where life cycle costs can be minimised as an alternative to regular maintenance schedules.

### Mix Design

The table below indicates the range of application rates and treatment depths to calculate the mix design. Individual mix design will be dependant on the site conditions, material properties, pavement gradient and traffic type and volume.

Treatment Depth in mm	SOILBOND A01 Rate % of Dry Weight of Material*		
	2%	3%	4%
	Usage Rate in kg/m <sup>2</sup>		
50	2	3	4
75	3	4.5	6

\* Based on a compacted density of 2 tonnes per m<sup>3</sup>.

# soilbond®

Environmentally Friendly Path, track and Road Stabiliser and Dust Suppressant

**Note : Dilute One Part SOILBOND with 1 part Water Prior to Mixing**

## **Construction New Paths or Tracks**

### **A-Onsite Stockpile Mixing-using Bobcat**

#### **Applying Soilbond A01 to stockpile and mixing**

**Step 1:** The stockpile is flattened and some Soilbond A01 is sprayed onto the surface

**Step 2:** Mixing using the bobcat

**Step 3:** As the granitic sand is turned over further SoilbondA01 is added to the turned over material and the stockpile

**Step 4:** Mixing continues

**Step 5:** Turning over the material mixing in Soilbond

**Step 6:** The required amount of Soilbond A01 is added gradually whilst mixing occurs

**Step 7:** Once all the required Soilbond A01 is added to the stockpile, mixing continues to ensure uniform distribution

Continue mixing until the binder has consistently coated the material and uniform colour is achieved

### **B- Off Site Mixing-using Pug-Mill at Quarry**

#### **Pug-Mill Stabilisation**

Usually performed at the quarry, the granitic sand is loaded into storage bins. The material is then conveyed to a pug-mill mixer, where the binder is added and mixed uniformly in the same stage. Correct moisture content levels are also adjusted at this stage. When mixing is complete the mixed material is transported in trucks to the site of installation.

#### **Optimum moisture content**

Mixing granitic sand Pug-Mill, and transporting to the construction site to be laid can result in drying out of the granitic sand. It is important to ensure that prior to compaction the Mixed material has the optimum Moisture Content

#### **Quality Management**

Quality management is essential to produce a material that will provide the desired performance in the field. To control quality the following factors should be considered:

- Uniformity of the material to be stabilised;
- Quantity and uniformity of distribution of SOILBOND A01 binder;
- Thickness (and uniformity of thickness) of the stabilised layer;
- Quality of mixing;
- Compacted density; and Surface finish.

## **Construction Existing Paths or Tracks**

### **A-Onsite Stabilisation - Existing Paths or Tracks**

#### **Insitu Stabilisation**

The following description is for a multiple pass mixing process. Multiple passes ensure good uniformity of mixing. The general construction process is:

- 1) Rip the pavement to the recommended depth. If necessary, new granitic sand is added at this stage.
- 2) Apply water to assist incorporation of the SOILBOND A01 binder and obtain the required moisture content for compaction.
- 3) Apply binder at the recommended spread rate followed by mixing.
- 4) Mechanically mix the binder into the ripped material. Mixing equipment will depend on the area size: Grader, tractor mounted rotary hoe, road profiler, skid steer with appropriate attachment or hand rotary hoe.
- 5) Continue application and mixing until the binder has consistently coated the material. Use the "hand clench" test to confirm suitable binding and moisture content prior to compaction.
- 6) When material is sufficiently mixed, levels should be adjusted and shaping of the pavement completed prior to compaction.
- 7) Compact with a steel smooth drum roller, vibrating roller or/and vibrating plate until a smoothly graded finish is obtained.
- 8) The stabilised pavement undergoes conditioning and curing process.
- 9) Care must be taken to treat and well compact the sand adjacent to the edges to prevent erosion to commence at the edges.

#### **Optimum moisture content**

When applying Soilbond insitu it is important to ensure that prior to compaction the Mixed material has the optimum Moisture Content

#### **Quality Management**

Quality management is essential and the following factors should be considered:

- Uniformity of the material to be stabilised;
- Quantity and uniformity of distribution of SOILBOND A01 binder;
- Thickness (and uniformity of thickness) of the stabilised layer;
- Quality of mixing;
- Compacted density; and Surface finish.