

**NOTE:** The soil should have already been tested for suitability and for chemical contaminants. If not, the test instructions for soil suitability and chemical contamination are on the following page.

## **PAVEMENT MIX**

### ***PRELIMINARY SOIL TESTS***

#### **1. SOIL SUITABILITY TEST (Natural Cohesiveness)**

##### **TOOLS NEEDED FOR THE SOIL SUITABILITY TEST**

- 1 Sixteen Ounce Plastic Bottle of Water
- 1 Hand Spade, Small Garden Type
- 1 One-Gallon Bucket or a smooth non-porous surface

##### **SOIL SUITABILITY TEST INSTRUCTIONS:**

- 1. SCOOP UP A SPADE FULL** of representative soil. If the soil has sufficient moisture for compacting, go to Step 3. If the soil is too dry for compacting, go to Step 2. If the soil is too wet or too muddy for compacting, allow the soil to dry a bit before doing this test.
- 2. MOISTEN THE SOIL** with water while mixing it with the hand spade until it is moistened to the point of being ready for compacting.
- 3. SQUEEZE A HANDFUL** of the moistened soil tightly and then open the hand. Observe the handful of soil.
- 4. IF THE SOIL FAILS TO CLUMP** and does not hold together when the hand is opened, the soil is not suitable for pavement treatment.
- 5. IF THE SOIL CLUMPS AND HOLDS TOGETHER** in one piece, leaving no free pebbles or soil in the hand, then take both hands and gently break the soil clump in half.
- 6. IF THE SOIL CLUMP BREAKS INTO TWO CLEAN PIECES**, the soil has sufficient natural cohesiveness and it is suitable for pavement treatment.
- 7. IF THE CLUMP BREAKS APART IN SEVERAL PIECES**, the soil is borderline and requires the addition of more fines or the concentration pavement should be increased.

**THE LACK OF NATURAL COHESIVENESS** is usually due to the soil having too few fine particles to provide the necessary particle contact points for efficient binding, as with gravel.

**THE LACK OF NATURAL COHESIVENESS** could also be due to soil contamination. Though rare, oily residuals from herbicide applications or other petro-chemicals can cause the soil to lose its natural cohesiveness.

### ***UNSUITABLE SOIL MUST BE REMOVED, REPLACED OR MODIFIED***

#### **2. SOIL CONTAMINATION TEST (Water Absorption)**

##### **TOOLS NEEDED FOR SOIL CONTAMINATION TEST**

- 1 A Bottle of Clean Water

##### **SOIL CONTAMINATION TEST INSTRUCTIONS:**

- 1. SPRINKLE, POUR OR SQUIRT** a few drops of water directly onto the compact dry soil surface.
- 2. OBSERVE THE WATER.** If the water stands on the surface, beads, runs-off or fails to seep into the soil immediately, the soil is probably contaminated and it might not be suitable for pavement treatment.

**SOIL CONTAMINATION** occurs in soils that have been subjected to or treated with petroleum chemicals, surface acting agents or other man-made chemicals. When contaminants come in contact with soil particles, the soil particles are coated with thin layers of oils or residues that interfere with the physical bonding process.

### ***CONTAMINATED SOIL MUST BE REMOVED, REPLACED OR PRE-TREATED***

# PAVEMENT MIX

## APPLICATION METHODS & INSTRUCTIONS

### MIX-IN APPLICATION METHODS

#### GENERAL EQUIPMENT FOR MIX-IN APPLICATION METHODS

1. **Storage:** Indoors or outdoors, buckets, drums, avoid freezing temperatures.
2. **Transfer Equipment:** water pump, hoses, fittings, funnels, buckets.
3. **Spraying Equipment:** Truck/trailer mounted dilution tank with spray bar or hand wand.
4. **Tilling, Mixing Equipment:** tractor drawn or walk behind roto-tiller.
5. **Grading and Leveling Equipment:** hand rakes.
6. **Compacting Equipment:** steel drum roller, hand tamper (achieve 95% Proctor).
7. **Measuring Equipment:** tape measure, metering tank, buckets, calculator.

The equipment must be selected to match the size of the project. Refer to manufacture's guidelines for equipment selection recommendations.

#### MIX-IN APPLICATION PRECAUTIONS

1. **COMPLETE THE SELECTED APPLICATION PROCESS** on a small scale area (i.e. one square yard) before attempting a full scale project.
2. **DO NOT APPLY** soil solidifier during rainfall.
3. **DO NOT APPLY** soil solidifier if rain is forecast in the next 24 hours. If rain is expected before the surface of the newly applied soil solidifier has dried, cover the wet soil solidifier application with a waterproof tarp to prevent rain damage.
4. **DO NOT EXPOSE CONTAINERS OF** soil solidifier to freezing temperatures.
5. **DO NOT APPLY** soil solidifier at air or ground temperatures less than 42 degrees Fahrenheit.
6. **ALLOW FOR PROPER DRAINAGE** of a soil solidifier application. Grade, contour, and compact the soil so that the finished soil surface will be free of depressions.
7. **ALLOW ANY EXCESS MOISTURE** in the treated soil to dry before compacting if necessary, as opposed to compacting soil that is over-wet because it might tend to stick to the roller.
8. **THE MINIMUM DILUTION RATIO** recommended for a pavement mix-in application is two two parts water to one part pavement. If a dilution ratio lower than 2 to 1 is used (i.e., 1.5 to 1), then the soil has to be mixed quite a bit more to assure that all of the soil particles are coated with pavement before re-compacting. If the Soil Moisture Field Test shows that the percent of water required for OMC is less than 4%, then the soil is too wet. It might be necessary to allow the soil to dry enough so that the OMC requirement is greater than 4%.