

Mixing Instructions for Perma-Soil® Stabilizer

Wear gloves, dust mask and eye protection during application

- 1) Survey moisture content.** All soils must have a minimum of 6 to 7% moisture content. A quick field check is to squeeze a handful of soil into a ball; if it retains its shape, the minimum is present. The only exception to this moisture content is in clay soils without silt or sand (when rubbed between thumb and forefinger this clay will shine). This type of soil should have a 15 to 30% moisture content. With that moisture content, when the soil is rolled between the hands, it will elongate into a roll without breaking, down to 3 mm diameter. Should it break before reaching 3 mm diameter, it is too dry and more water should be added.
- 2) Determine mixture amount.** In all soils a minimum mix of 25 Kg per cubic metre is required. If the soil is saturated with moisture it should have 50 Kg per cubic metre. The heavy clay content soil identified above will require some special action to ensure proper reaction. This soil should be broken up, during excavation, into pieces 50 to 75 mm in diameter and then be completely covered with Perma-Soil stabilizer. If this is done the proper ratio will be obtained. (Perma-Soil stabilizer will assist breaking up the clay structure as it is mixed into the soil.)

NOTICE: Do not use higher than recommended amounts of Perma-Soil because high mixture pH may result. High pH may cause corrosion or adversely affect life of buried services or components.

- 3) Mixing.** Mixing should be accomplished with an excavator or front end loader If available, (or manually with a shovel on small excavations). When working in clay soil without silt or sand content, the procedure described in step two above is necessary to obtain proper reaction and ensure proper mixture ratio of stabilizer to soil. In all other cases the last two lifts, or 300 mm of spoil, should have a higher ratio of stabilizer added to the soil. This is done by setting aside a quantity of stabilizer that should be added and mixed immediately prior to compaction of the last 300 mm. It is not necessary to allow more curing of this spoil.
- 4) Curing instructions.** The mixture should be allowed to set for 30 to 60 minutes for curing, or until the Mixture becomes compactable. A field check is to squeeze a handful of soil into a ball; when dropped from waist high it should break into two or three pieces to be at its best compactable state. If it shatters, it is too dry; if it stays in one piece and deforms on impact, it is too wet. When curing is completed, the material is ready to be compacted back in the repair site. Heavy clay soils may take longer to become compactable.
- 5) Compaction of the spoil.** The material should be replaced in the excavation in 150 to 200 mm lifts and compacted so that all air voids are removed. This should be continued until all spoil is replaced and compacted. Petrol rammers, the bottom of the excavator bucket, pneumatic / hydraulic tamper, or hand tampers can be used to accomplish compaction.

NOTICE: VIBRATORY PLATE COMPACTORS ARE NOT SUITABLE FOR COMPACTION EXCEPT FOR OVERLAY MATERIAL OR GRANULAR (NONCOHESIVE) SOILS AND THEN ONLY IN THIN LIFTS.

- 6) Overlaying the repair.** When compaction is completed, the excavation may be overlaid with overlay material immediately. Traffic should be kept from travelling over the repair site for a minimum of one hour after compaction or until the overlay material has cured.

Storage and use information is based on laboratory and field tests. However, the manufacturer neither warrants nor accepts liability for safety or for results obtained, since storage and use are beyond its control. Testing does not guarantee satisfactory performance in all conditions or situations. Adequacy of soil stabilizer for a particular application should be determined by testing it under the anticipated soil and field conditions.