Mapesoil 100

High-Performance, Fiber-Reinforced, Powdered Stabilizing Agent for Sports Surface Sub-Bases

FOR PROFESSIONAL USE ONLY

DESCRIPTION

Mapesoil™ 100 is a hydraulic, high-performance, fiber-reinforced, powdered stabilizing agent used to treat and consolidate soil and recycled or raw aggregates, such as naturally graded soil.

FEATURES AND BENEFITS

Mapesoil 100 has been specifically developed to stabilize soil used to create sub-bases with optimal horizontal drainage for sports surfaces, such as synthetic turf fields. *Mapesoil 100* is specially formulated for resistance to leaching of the sub-base after treatment.

Mapesoil 100 improves the mechanical characteristics of soil when compared to traditional sub-base treatments such as lime, allowing the treated layer to be reduced to an average of just 4" (10 cm) thick. This makes *Mapesoil 100* easier to apply with agricultural equipment (stone buriers, tractors with a cultivator attachment, spreaders, etc.) and more suitable for the treatment required to prepare synthetic turf areas. *Mapesoil 100* improves the horizontal drainage capacity of the sports surfaces and, over the years, prevents erosion under the surface where water could collect and form puddles that could damage the sports surface.

WHERE TO USE

- To stabilize sub-bases for synthetic turf sports surfaces
- To cold-recycle old sub-bases from existing sports surfaces made from asphalt
- To create sub-bases for playing surfaces by recycling old, worn out synthetic turf
- To stabilize existing clay courts and convert them into alternative sports surfaces

LIMITATIONS

- Do not install if heavy rain is expected within 24 hours of installation.
- Organic content of soil to be treated should be less than 2% per ASTM D2974.
- The workability time of soil containing *Mapesoil 100* depends on the application conditions and may vary from 1 to 4 hours, depending mainly on the surrounding temperature during application.
- *Mapesoil 100* should not be applied at temperatures below 41°F (5°C).

SURFACE PREPARATION

- When necessary, remove any existing topsoil, vegetation and/or roots under the surface using suitable equipment, such as a stripping machine, to the recommended depth of *Mapesoil 100* application.
- Optimum soil classifications for treatment are A1-A2-A3-A4 (ASTM D2487-85, D2488-84, D3282-83).
- Loosening of the soil is recommended to increase workability and even distribution of *Mapesoil 100*.
- Pre-wetting of the soil may be necessary to aid in reaching optimum moisture levels, especially in elevated temperatures. The optimum moisture content can be measured by soil moisture probes. Alternately, optimum moisture content is achieved when a ball of soil is formed in one's hand and, upon squeezing, no free water appears on soil but a wet outline of the ball is left on the hand.
- Pre-loosening and pre-wetting of the soil to be treated both help to achieve a homogenous final mix.

PRODUCT APPLICATION

1. **Dosage:** The amount of *Mapesoil 100* required depends on the type of material to be treated and the final mechanical properties required, and varies from 3% to 5% of the weight of soil to be treated, or around 1 to 2 lbs. per sq. ft. (5 to 10 kg per m²) for a layer at least 4" (10 cm) thick. The optimum amounts of *Mapesoil 100* and mixing water required in the mix are established through preliminary laboratory tests (Modified Proctor soil density test according to ASTM D698-78, D1557-78, D1558-84, D2168-80 and the CBR load-bearing index according to ASTM D1883-87, D4429-84). MAPEI's geotechnical laboratory is available to carry out preliminary analysis along with soil classification and optimum mix design as required by the project.
2. **Spreading:** Using a drop-style spreader, determine the appropriate speed for reaching recommended dosage level of *Mapesoil 100*. Spreaders with rotary/disk style distribution are not recommended because proper dosage is difficult to achieve with this method. This operation should only be carried out over an area that can be treated within the maximum workability time of about 4 hours. The dosage of *Mapesoil 100* required should be established with preliminary laboratory tests, as uniform as possible and checked periodically.
3. **Mixing:** After spreading *Mapesoil 100*, mix the treated soil/aggregates down to the specified depth with suitable equipment until an even, regular mass is formed (when the off-white color of *Mapesoil 100* is no longer visible). In higher temperatures, additional water may be added to maintain the optimum moisture

content of the mix. Make sure that puddles do not form, so that the final mechanical properties of the mix are not compromised.

4. **Leveling, shaping and compacting:** Level off the fresh, even mix of *Mapesoil 100*, water and soil/aggregate with a laser-guided leveling machine to achieve the required slope with respect to the tolerances specified by the architectural design. The shaped mix must then be compacted with a roller (such as a 3-ton [3 048-kg] dual-action tandem roller) until the compaction density is at least 98% Mod. AASHTO. If the compacting operation creates areas in the surface that are not perfectly flat, use the existing mixture of *Mapesoil 100*, water and soil/aggregate to fill hollows while the mix is still fresh.

CLEANUP

Clean tools and equipment used to prepare and apply the *Mapesoil 100* mix with water before it hardens. Once hardened, cleaning must be carried out mechanically.

CURING

After applying *Mapesoil 100*, protect the exposed surface for at least 24 hours to prevent the water from evaporating off too quickly by covering it with waterproof sheets. Alternately, the surface can be wetted occasionally with water to maintain optimum moisture content throughout the curing period. Make sure that the mechanical action of the water does not leach the surface, which should be applied evenly over the surface with a sprinkler.

Product Performance Properties

Tests	Results
Solids content	100%
Bulk density	36.2 ± 0.6 lb. per cu. ft. (580 ± 10 kg per m^3)
Density of mix	131.1 ± 6.2 lb. per cu. ft. (2 100 ± 100 kg per m^3)
Compressive strength after 3 days – ASTM C109 After 3 days After 7 days After 28 days	 > 290 psi (2 MPa) > 2,900 psi (20 MPa) > 4,350 psi (30 MPa)

Shelf Life and Product Characteristics

Physical state	Powder with fibers
Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C)

Protect containers from freezing in transit and storage.

Packaging

Size
Super sack: 1,600 lbs. (726 kg)
Bag: 33 lbs. (15.0 kg)

ADDITIONAL INFORMATION

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

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