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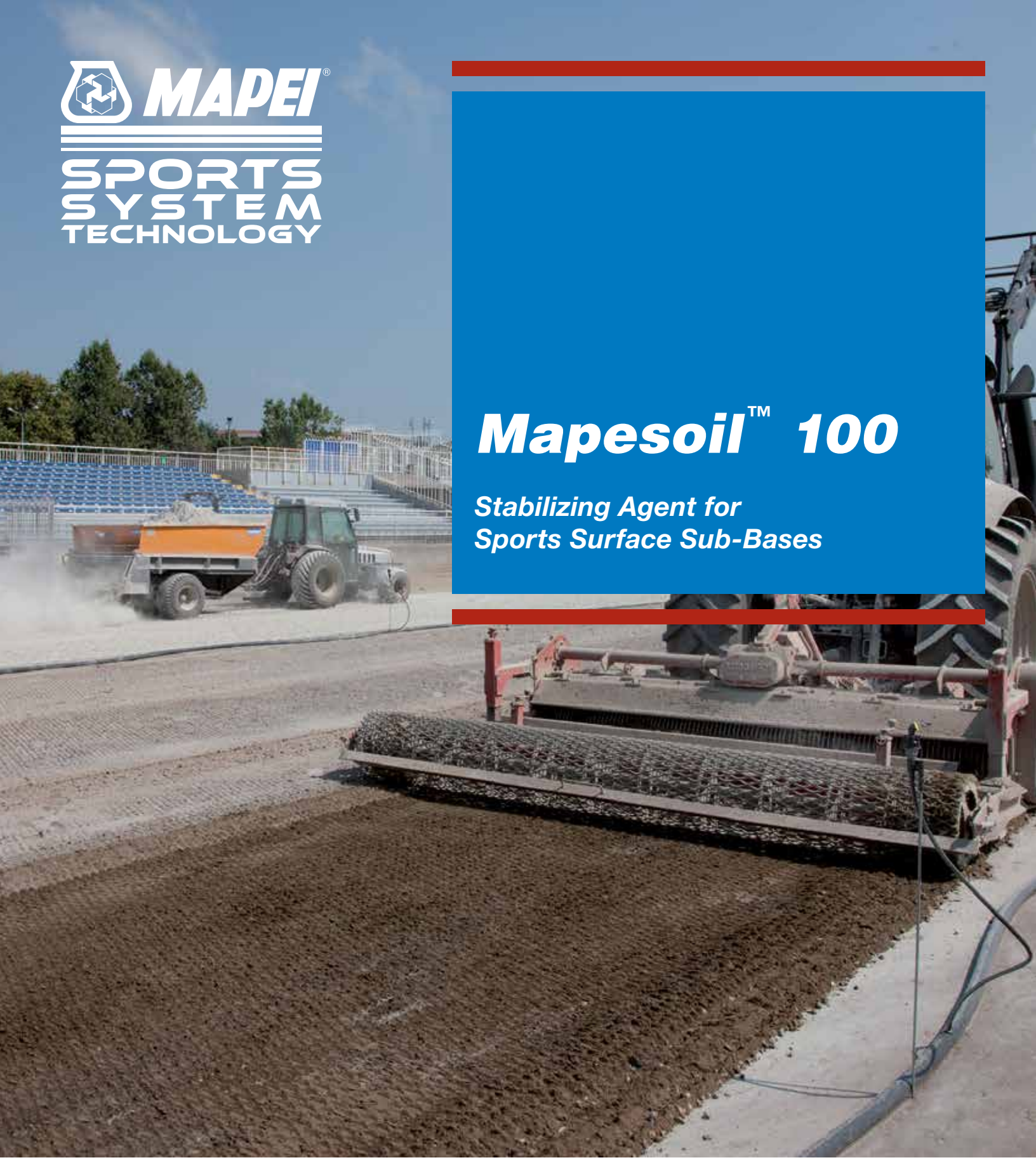
SPORTS SYSTEM TECHNOLOGY



Mapesoil™ 100

Stabilizing Agent for Sports Surface Sub-Bases

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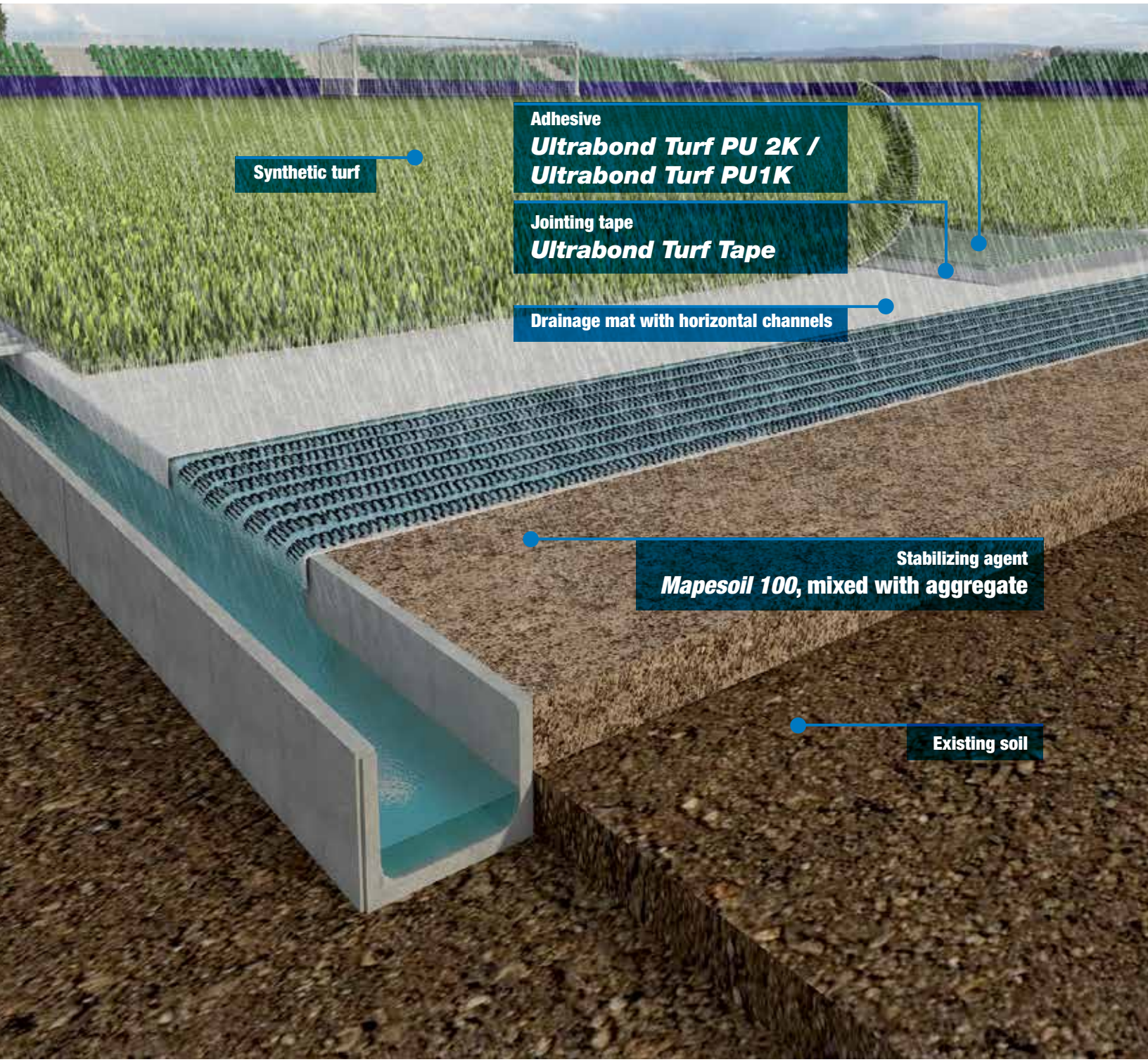
System for synthetic turf surfaces



Mapesoil™ 100

Stabilizing Agent for Sports Surface Sub-Bases

MAPEI systems for horizontal drainage of synthetic turf sports surfaces

The performance and comfort properties needed in a sports surface, which determine whether it is suitable for a specific sport, must also be met when it rains. This means that an efficient system to drain water from the surface must be included to guarantee the functionality of the playing field, even when weather conditions are unfavorable (such as heavy rain over a short period of time just before an event or match).

Because drainage is such an important feature, MAPEI research has developed an innovative system to create sub-bases with a horizontal drainage system whereby the water flows away just below the turf surface: An impermeable drainage layer is interposed between the synthetic turf surface and the sub-base, which enables rainwater and irrigation water to flow off horizontally. The water flows off from the center of the sports area toward the edges of the field and into drainage channels positioned around the perimeter of the sports surface.

With horizontal drainage of synthetic sports surfaces, the sub-base becomes the key element to the proper functionality and efficiency of the entire system, which means that it must have certain characteristics:

- Flatness: The surface of the sub-base must not have any hollows to make sure water flows away evenly and there are no puddles.
- Slope: The surface of the sub-base should have proper gradients to the side (typically from 0.58% to 0.63%) to guarantee that water flows off by gravity within a given time.
- Volumetric stability: The sub-base must maintain its flatness and gradient over the years to guarantee the functionality of the sports surface and to prevent erosion.
- Strength: The sub-base must have proper bearing capacity to with stand vehicles driving over the sports surface for maintenance work or during an event.

Application steps for removing organic material and adding *Mapesoil 100*

1 **Preparation of soil (topsoil removal)**

2 **Spreading of *Mapesoil 100***

3

What is *Mapesoil 100*?

Mapesoil 100 is a hydraulic, fiber-reinforced powder that stabilizes the soil sub-bases for synthetic turf sport fields with horizontal drainage. The main areas of use for *Mapesoil 100* are:

- Stabilizing of aggregate sub-bases for synthetic turf sports surfaces with horizontal drainage (such as football fields and soccer fields).
- Consolidating and stabilizing of organic sub-bases for existing sports surfaces (such as clay tennis courts and baseball diamonds).
- Maintenance of existing synthetic turf sport fields by cold-recycling existing bitumen conglomerate sub-bases.

How does *Mapesoil 100* work?

When *Mapesoil 100* is mixed thoroughly into the soil to be treated, it consolidates the material already present on the sport field, giving it the characteristics required for synthetic turf installation (strength, volumetric stability, slope and flatness). The hardening action of the soil treated with *Mapesoil 100* contributes in improving the durability of the sub-base compared with traditional stabilization treatments (lime/cement). The fast-track, high-performance characteristics of *Mapesoil 100* also reduce the required amount of soil that needs treatment to an average thickness layer of only 3 to 6 inches (7.5 to 15 cm). Other treatment systems can require treating layers up to 12 inches (30 cm) thick, which greatly slows the process.

The cost of using *Mapesoil 100* to convert an existing sports field to synthetic turf may be surprising. Depending on project specifications, it can be considerably more economical to create a sub-base using *Mapesoil* technology. A classic vertical drainage system involves adding aggregates, digging up massive amounts of soil for each field and having to dispose of waste material.

Thanks to a special formulation developed in the MAPEI research laboratories, *Mapesoil 100* allows the stabilization process to be applied to waste material coming from maintenance work on existing sports surfaces:

- Milled bitumen conglomerate: *Mapesoil 100* can be used to cold-recycle old bitumen conglomerate sub-base. After being milled, the material can be stabilized directly on site, thus avoiding costs for handling and disposing of special waste.

Mixing of *Mapesoil 100* with aggregate

Wetting of the mixture

Leveling to the de

- Clay surfaces: *Mapesoil 100* may be used to stabilize old clay tennis courts where synthetic turf with horizontal drainage will be installed.
- Worn-out synthetic turf surfaces: *Mapesoil 100* can allow the old synthetic turf surface to be reused so it does not have to be disposed of. Through a simple process that separates the stabilizing infill from the synthetic turf, the turf is then minced and mixed with *Mapesoil 100*. The resulting mixture can be incorporated in the sub-base for the new sports surface.

All these operations can be carried out on site so that the handling of materials is minimized.

Features of *Mapesoil 100*

Using *Mapesoil 100* technology to create sub-bases for synthetic turf sports surfaces offers numerous technical and economic advantages, such as:

- Simple application
- Reduces the treatment thickness considerably to an average of 3 to 6 inches (7.5 to 15 cm) with no change in performance
- Allows utilization of on-site soil and/or recycled material, reducing material handling and energy consumption
- Reduces the time needed to create the sports surface sub-base
- Increased durability of sports fields
- Enhanced efficiency of the horizontal drainage system
- Improved comfort and safety of the sports surface for athletes
- Satisfies technical and performance requirements of professional and amateur sport associations

How is *Mapesoil 100* applied?

Mapesoil 100 is mixed directly with the material to be treated and then watered. The steps are as follows:

- Preparation of the soil (removal of the topsoil and, if necessary, breaking up the soil)
- Spreading of the *Mapesoil 100*
- Mixing in the *Mapesoil 100*
- Wetting the soil
- Leveling the surface to the desired gradient
- Compacting and curing

sired gradient

6 Compacting and curing

7 Final synthetic turf installation

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SPORTS SYSTEM TECHNOLOGY

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