

Environmentally Friendly Weed Deterrent Stabilizing Sand

Over the past five years Envirobond Corporation, a firm with a strong focus and commitment to R&D and a fully equipped “in-house” testing laboratory, has distributed a unique product line that effectively stabilizes jointing materials used in “hardscaping”.

In addition to deterring weed growth and protecting interlocking and natural stone pavement systems from experiencing jointing material loss, the materials accelerate the natural weathering processes and significantly improve the over-all performance of segmental paving systems.

This season Envirobond made a significant performance improvement when they modified the formulation of EnviroSAND (stabilizing jointing sand for paver joints) and EnviroSTONE (stabilizing crushed stone for flagstone joints).

According to Mike Riehm, President of Envirobond, the company’s laboratory technicians were in the process of investigating a number of improvements that could improve the overall strength and durability of the product when they reported the breakthrough. “During accelerated performance testing that is designed to simulate the actual conditions these systems experience while in service, our laboratory staff reported that the additive has the added benefit of deterring weed growth. As a result, our new innovative product line is not only more durable, but now also includes a natural, environmentally friendly weed deterrent additive.”

According to Riehm, the products are environmentally friendly, contain no hazardous chemicals and effectively bind the component particles together in a flexible –yet durable state. The technology, which was developed in response to feedback from hardscaping professionals and pavement engineers, represents a significant breakthrough for the industry because the loss of jointing materials quickly results in loss of “interlock” and unsightly weed growth –two of the major concerns in the marketplace.

Primary Cause of Weed Growth

Contrary to popular belief, the primary cause of the weed growth is not the result of pre-developed roots underneath the paving system. In actual fact, weed infestation is caused by the germination of seeds that find their way over time into the joints between the paving units.

In addition to significant maintenance concerns, uncontrolled weed growth not only detracts from the appearance of the system, but also can lead to loss of structural integrity and other serious long-term deficiencies.

The subject has received considerable attention because these field performance issues have been singled out as a primary concern for end users. Removing weeds by hand is labor intensive and time consuming. The use of weed trimmers or lawn mowers can actually stimulate more growth. Spraying weeds with herbicide chemicals, which must be

handled with care, is one option – but can be expensive because the application must be frequently repeated and *can also be detrimental to the environmental surroundings*.

What is “Interlock”?

The sand, which fills the joints between interlocking segmental pavers, plays an essential role in the long-term performance and appearance of the system.

When properly installed the base materials, unit pavers, jointing sand and edge restraints create and maintain “interlock” between the neighboring paver units as well as the entire pavement surface. The term “interlock”, explains Dietmar Bischoff of Envirobond, describes the transfer of loads. Vertical load forces that are applied to the surface of the pavement by a vehicle, for example, are transferred to a horizontal direction that is exerted with great force on the sides of the pavers. The tightly compacted base materials, pavers, jointing sand and edge restraints, all act together to prevent the individual units from moving or shifting in isolation.

When the joints are tight and the sand secure, the result is an incredibly strong – yet flexible “interlocking” pavement system. “The bigger the load – the stronger the system becomes,” reports Bischoff.

However one of the major concerns according to Bischoff is the fact that, without treatment of one form or another, the sand has a tendency to “disappear” over time. The loss of joint sand is the result of traffic, storm water runoff, wind, erosion, insects or aggressive cleaning techniques.

Loss of Interlock Leads to System Failure

When the sand is lost from the joint spaces it is quickly replaced by soil or dirt. “Joint sand loss can lead to pavement system deterioration and if left untreated – loss of interlock and system failure” reports Bischoff. The loss of sand also creates conditions that can result in the rapid growth of weeds. Inspection reports by paving engineers also suggest that this process is accelerated dramatically as more and more weeds establish themselves – pushing the paving units further apart as even more soil accumulates and weed growth occurs.

Interlocking Segmental Paving Systems Are Not “Forgiving”

Pavement engineers do not consider interlocking paving systems to be “forgiving” when it comes to installation. Even a minor deficiency, either in selection of materials, installation, or lack of routine maintenance can cause separation of the pavement units, loss of joint sand, and system failure. The growth of weeds is just the beginning of the deterioration of the entire pavement installation. Once the process has begun it is extremely difficult to control and very expensive to repair.

In the past, the most practical and cost-effective method to minimize sand loss and prevent weed growth required inspection of the joints on a regular basis to ensure they were filled with sand and replacing the lost sand if required. This inspection activity is expensive and time consuming and in many cases it was overlooked or neglected.

“Other stabilizing products may not retain a flexible nature in service or require mixing of the sand on-site which can be time consuming and leave room for human error,” says Riehm. Envirobond contains the organic compound EnviroBinder ©, which essentially has an extended shelf life. Once spread and watered, the formulation acts to maintain the integrity and flexibility of the sand particles. These characteristics are of great benefit during the continuous movement and shifting that segmental paving systems experience while in service.

The binding agent also has the ability to “self-heal” with exposure to moisture. This mobility keeps the system “segmental” while still preventing erosion. This also allows the contractor to lift and re-lay pavers and re-use the sand.

Envirobond products are fully tested by leading professionals prior to release into the market reports Riehm. “This valuable feedback, as well as our in-house research capabilities and full-scale laboratory testing facilities, enable us to continuously improve the Envirobond line. Essentially our products are designed by the landscape industry - for the industry,” says Riehm.

Envirobond is currently seeking regional dealers and distributors.

For more detailed information on environmentally friendly weed deterrent stabilizing sand and stone products please visit www.envirobond.com