

Toro-Tan

Revolutionary Surfacing from the Past for the Future

Not only water permeable and environmentally sound, promoting water conservation and biodiversity, Toro-Tan recycles thousands of tires annually.

Originally invented and patented in Switzerland in the 1970s and subsequently patented in the United States, #4,492,728, **Toro-Tan** was ahead of its time offering yet to be realized properties that are becoming central pillars of sustainability in an age of global warming and the need to manage land and water resource, install Low Impact Developments and lower the effects of urban heat islands.

When first invented, **Toro-Tan** was to provide a water permeable and load bearing surface that also provided properties of flexibility to accommodate heaving from frost and other forces. The original intent may have been for installation in athletic surfaces in a country where damp weather, water permeability and ground water management are critical, **Toro-Tan** quickly evolved to include surfaces for horses, recreation, play and landscape applications. These have included cover for water collection swales, surface erosion on slopes and shore lines, permanent trails in naturalized settings etc. These features have also made **Toro-Tan** ideal surfacing for planting beds, green rooves and urban walkway tree grating.

A unique property of the **Toro-Tan** is that it not only allows for water to penetrate vertically in both directions, it also will allow for the movement of air. These unique installation properties can prevent compaction of sub-soils in delicate environment such as sport court cover of septic tile beds or urban trees.

In the landscape environment there is the need to manage water resources and the loss of water tables. Years of rain water capture on hard surfaces and channeling it to storm sewers has robbed the local water shed of its ability to recuperate and recover the water in the water table. The installation of a **Toro-Tan** swale covering a water capture system specifically design to retain and/or dissipate water allows for the provision of a traversable surface along with the management of water in a controlled manner. The nature of the installation also provides a filtration of the water as it passes through the **Toro-Tan** on its way to the water table or river systems. The actual design of the system and installation procedures will be dependent upon the specifics of the project.

As a green roof, **Toro-Tan** provides unique properties that no other system brings to the landscape. As with all systems, the **Toro-Tan** is permeable and will allow water to pass through and be filtered before it reaches the roof deck then to drains or a water collection and circulation system. The void space between the bonded aggregate can retain water, plant media and plants. The unique binder used in the **Toro-Tan** is hygroscopically

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stable, meaning it can be immersed in water without degradation of the system integrity. Depending upon the roof system and the plant material selected for the green roof, water can be introduced by reversing the drainage flow and growth of the plant materials can be enhanced through the introduction of liquefied fertilizers.

Depending upon the design of the building roof system, there will be a need for a ballast system. The installation design and techniques for the **Toro-Tan** can be adjusted to provide not only a green roof, but also a ballast system. Beyond this, the **Toro-Tan** can be made to accommodate utilities, HVAC, and other devices that must be located and serviced on the roof. The **Toro-Tan** can be modified to act as an underlay for devices and act as an energy and vibration attenuator. This makes the entire green roof including walkways and utilities one integrated system from one source.

For the trail and walkway builder, **Toro-Tan** offers a unique system that offers unique benefits. The installation can be tailored to follow contours of the land where erosion can pose costly and major annual repairs. With the appropriate designs the **Toro-Tan** can allow for the movement of water vertically and laterally providing long-term functionality and durability. The nature of the **Toro-Tan** will also enhance the ability to remove snow, making trail heads more serviceable throughout most of the year. Trails through environmentally sensitive area benefit from the reduction of erosion and depending upon the design, the filtering of water and retention of silts.

Toro-Tan has been successfully installed in Southern Ontario since 1981 and the most prominent installation would be the 8 lane, 400 meter running track installed on a limestone aggregate base at Resurrection Catholic High School in Kitchener, Ontario. After 25 years of service, it is continuing to enhance the lives of the students and runners in the community.

Although viewed as unique and new, the **Toro-Tan** system has now been installed as an ice-skate changing surface at outdoor skating facilities. Sadly, unique as this system might seem, it has been originally developed as "Spring-Turf" impermeable surface for thoroughbred horse's exercise and barn surfaces. For both of these applications it is important that moisture must remain on top of the surface system, while the point load of ice skates and horseshoes which are not dissimilar from the point of view of prevention of damage to the surface and the need to be slip-resistant, must be accommodated.

What once was unique and is now a commonplace application of the **Toro-Tan** system with some obvious modifications, the EVERPLAY Play and Recreation surfaces that have been installed across Canada with great success since the mid-1980s. There are thousands of successful installations that have brought ongoing enjoyment and injury prevention for children in playgrounds.

As the market and contractors race to collect on the opportunity to make profits with a new trend it must be remembered that not all aggregate/polyurethane bound systems are **Toro-Tan**. Unique to the system is the polyurethane binder that is manufactured

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exclusively for EVERPLAY International Inc., by rmz Elastech Products Inc. since the mid-1980s. This formulation and blending of materials has remained the same since it was first introduced and it is for this reason that EVERPLAY can assure its customers the functional longevity of their new **Toro-Tan** installation. This history of binders as well as application techniques bring the customers of the **Toro-Tan** system a level of comfort for the future of their project that can be provided by no other system.

An added bonus to the **Toro-Tan** system is that it contains recycled tire rubber. Owners concerned with the Green Building Council and building LEED credits will welcome the environmental advantages of the Toro-Tan.

The more than 30 years of experience with polyurethane bound systems, EVERPLAY is uniquely qualified work with clients to install systems that bring success to projects. Rather than attempt to provide more details, we would recommend contacting EVERPLAY at rolf@everplay.com or henry@everplay.com and discuss the details of your project.