Choosing A Running Track Surface

An important choice in planning a track is the type of surface. Today, there are many choices. There is no right surface, but there may be a right surface for you, given your financial resources, type of usage, location, and maintenance capability. Learning about prospective surfacing systems and choosing the best system for your circumstances are the keys to long term satisfaction.

Natural material track systems, such as cinder and clay, used to be common. These tracks were relatively inexpensive to construct, but they had two major disadvantages: 1) they required constant and costly maintenance, including leveling, addition of fill material and re-marking; and 2) they were rendered soggy by rains, often causing postponement or cancellation of meets. In recent years, the growing cost of transportation of the materials used in these tracks has increased their cost to a point where they are not that much less expensive than more modern systems. Consequently, hardly anyone is building these tracks today.

The first modern track surfacing systems, the so-called all-weather surfaces, became popular in the late 1960's. Their development meant that, for the first time, systems were available which were durable and which were relatively unaffected by ordinary weather. Many of these systems consisted of a combination of rubber with asphalt emulsion or sand and asphalt. These systems were called "asphalt-bound." Although many existing asphalt-bound tracks are still in use, like cinder tracks, these tracks are no longer being constructed in large numbers because their disadvantages are no longer balanced by a significant cost savings.

Asphalt-bound tracks are affected by temperature - they become quite soft in the summer heat and very hard in the winter cold. More importantly, asphalt becomes harder as it ages, so that despite its rubber content, an older asphalt-bound track may be no more resilient for runners than an ordinary street. At the same time, the cost of a sand-asphalt-rubber track has increased because it has become difficult to find an asphalt plant willing to manufacture the special mix required at an affordable price, since its manufacture requires shutting the plant down, producing the special mix, cleaning the plant equipment and restarting production of regular mix.

Existing asphalt-bound tracks in good condition are often sealed to prolong their life.

Today, most tracks are constructed of rubber particles bound with latex or polyurethane. The latex or polyurethane surface is typically installed to a depth of 3/8" to 1/2" on top of an asphalt or concrete base.

The rubber used may be black or colored. Black rubber particles may be granular or stranded and they may be made from natural rubber, styrene-butadiene rubber (SBR) or ethylene-propylene-diene rubber (EPDM), virgin or recycled. Colored rubber particles are almost always made of virgin EPDM rubber and they come in granular form only. The relative costs and performance characteristics of the types of rubber used are beyond the scope of this publication. A prospective owner should discuss the various systems available, their costs and performance differences with their design professional or builder. In general virgin rubber is more expensive than recycled rubber and colored rubber is more expensive than black rubber. When using recycled rubber, its quality and performance is dependent on the care taken in separating different types of scrap before grinding. The performance of any type of rubber is dependent on its chemical composition, the quality of its manufacture, its compatibility with the binder system and the care taken during its installation.

Latex-bound tracks provide good performance and durability. Latex systems can be installed in multiple layers or in a single layer, creating a permeable, resilient surface. In some systems the rubber is spread over the track surface which is then sprayed with the latex binder. In other systems the rubber particles and binder are pre-mixed and then spread. Virtually all latex systems are permeable to some degree. The basic, and least expensive, system is black, but three types of colored systems are available. These are: 1) colored binder with black rubber; 2) color sandwich, which features colored rubber and colored binder in the top layers over black rubber; or 3) full-depth color, where both the rubber and latex binder are colored throughout the surface. Obviously, the greater the use and depth of colored binder and colored rubber, the more expensive the surface.

Polyurethane systems have been around longer than latex systems, and the full pour versions are often used on world-class competitive tracks. Polyurethane track surfaces can be either permeable or impermeable. They are generally mixed and

installed on site, though premanufactured systems are available. Polyurethane surfaces may be colored or black. There are four types. The basic polyurethane-bound system consists of rubber particles bound with polyurethane to form a base mat. The base mat may be used alone, or it may be enhanced by the addition of a structural spray consisting of a mixture of polyurethane and rubber sprayed on top of the mat. This creates a textured surface. Alternatively, the base mat may be sealed and coated with a flood coat of polyurethane and rubber, creating an impermeable, textured surface. Or lastly, a full pour system may be used in which each layer is mixed and poured in place. Full pour systems are impermeable and textured.

With so many systems available, it is important that an owner give a great deal of thought to choosing the best surface for a particular installation. Factors impacting that choice include initial cost, maintenance cost over the expected life of the surface, life expectancy, surface wear, repairability and performance characteristics. The assistance of an independent designer or professional may be particularly valuable in evaluating surfacing systems.

Once a surface is chosen, you should draft specifications. The more specific and detailed your specifications, the more likely that prospective builders will submit comparable bids. Specifications should outline the scope of work, including the subbase and base preparation, materials and hardware to be provided. Be sure to make clear in your specifications whether particular materials are required, or whether substitutions or equivalents are acceptable. Specifications also should detail the amounts of materials to be used. The ASBA can provide construction guidelines for use in drafting specifications for a project. It may be advisable to utilize a design professional or consultant to assist in developing specifications.

Reprinted from the American Sports Builders Association "Buyers Guide for Track Construction".

www.sportsbuilders.org

www.retnauer-design.com