

EMBEDDED SANDWICH SYSTEM
PRODUCT SPECIFICATIONS
EPIQ TRACKS™ X1000 EMBEDDED

Part 1 – General

1.1 Summary

The Synthetic Surfacing Contractor shall furnish all materials, labor, supervision and equipment necessary for the accurate completion of the synthetic track installation and all project-specific work indicated on the plans and specifications.

The guidelines established in this specification are to be considered minimum acceptable standards for installing a synthetic polyurethane track surface.

It is the responsibility of the Synthetic Surfacing Contractor to review the plans, specifications, field conditions and verify the locations where the **epiQ TRACKS™ X1000** surface is to be installed.

Contractors wishing to be considered as an “or equal” must provide documentation for their products 10 days prior to the bid opening.

The eco-friendly technology used to create **epiQ TRACKS** is a revolutionary breakthrough when it comes to meeting the IAAF standards. Typically IAAF protocol is met with waffle-like systems, air-infused products or sandwiched systems, which are comprised mostly of tire rubber. Manufacturers commonly introduce air or water to petroleum-based polyurethanes, creating a foam layer in order to pass the rigid standards.

epiQ TRACKS utilize new, non-petroleum based formulas to achieve resilience of vertical rebound and modified vertical deformation (MVD) instead of the antiquated water/air method.

epiQ TRACKS eco-based technology and exceptional chemistry has replaced 50-year-old petroleum based technology and allow us to create the most superior running track in the world.

epiQ TRACKS are anticipated to provide the foundation for the next generation of world record speeds.

1.2 Scope of Work

- a. The Synthetic Surfacing Contractor shall install an impermeable synthetic track surface comprised of graded black granules of SBR rubber, bound together with a mono-component polyurethane binder. The top surface layer is a composition of colored EPDM granules and similarly colored two-component polyurethane.



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- b. Layout and paint all track line and event markings in accordance with the latest edition of the IAAF, NCAA, NFHS or UIL rules and regulations, as applicable.

1.3 Coordination

Conduct operations while minimizing interference with other subcontractors on site. Do not obstruct walks or other occupied facilities without permission from the Owner. Perform work while minimizing disturbance to Owner’s scheduled events at the facility.

Part 2 – Standards and Codes

2.1 Guidelines

Guidelines to be followed on this project are those set forth by the IAAF, NCAA, NFHS or UIL, as applicable; along with the current material testing guidelines as set forth by the American Society of Testing and Materials (ASTM).

2.2 System Performance

- | | |
|-------------------------------------|-------------------------------------|
| a. Thickness | Average \geq 13mm or as specified |
| b. Force Reduction | 35-50% |
| c. Modified Vertical Deformation | 0.6mm-2.5 mm |
| d. Friction
TRRL Skid Resistance | > 47 |
| e. Tensile Strength | > 0.5MPa |
| f. Elongation at break | \geq 40% |

2.3 Quality Assurance

- a. The Synthetic Surfacing Contractor shall have a minimum of 8 years of experience in the installation of polyurethane synthetic tracks similar to the one being installed on this project.
- b. The polyurethane materials shall be made in the United States.



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- c. Manufacturer's chemist must have at least 10 years of experience in the manufacturing and compounding of two-part polyurethane designed specifically for sports surfaces.
- d. The Synthetic Surfacing Contractor shall have experience installing IAAF certified track systems.
- e. The Synthetic Surfacing Contractor shall attest that all track surfacing material meets or exceeds the requirements defined by the project specifications. Test data shall be submitted that shows that the product meets the required quality standards.
- f. The Synthetic Track Installation Supervisor must have installed a minimum of 10 full-depth polyurethane tracks in the last 3 years.

Part 3 – Submittal Data

The following submittal data must be received as part of the bid submittal:

- a. Standard printed specifications of the polyurethane track system being installed as part of this project.
- b. A reference list showing similar projects installed in the last 8 years.
- c. A synthetic track surface sample, minimum of 8"x11" in size, of the track system being installed on this project.

Part 4 – Materials

1. Primer

Polyurethane-based primers specifically formulated to be compatible with the base and track surfacing material.

2. Black SBR Granules

The rubber granules for the base mat shall be recycled SBR rubber, processed and chopped to 1mm-3mm size, containing less than 4% dust.

3. Polyurethane Binder

Binder for the black rubber mat shall be an MDI-based and or MDI/TDI mixture, polyurethane-binding agent. The binding agent shall not have a free TDI monomer level above 0.2%, must be clear or black in color, not opaque, and must be solvent free. The binding agent must be specially formulated for compatibility with SBR rubber crumb.



4. EPDM Granules

The EPDM granules shall be manmade, a minimum of 18-20% peroxide cured EPDM, chopped, processed and having a specific density of 1.5 +/-0.03 and a Shore-A hardness of 60 +/-5%. The granules shall be graded 1mm-4mm in size unless otherwise specified.

5. Polyurethane (Seal Coat and Top Layer)

A pore sealer minimizing component stretching shall be applied directly onto the base mat. The **epiQ TRACKS X1000** Single Cast Sealer (SCS) provides a thixotropic effect to seamlessly bind the base mat and polyurethane layer together, eliminating the need for rubber dust. Rubber dust application prevents effective pore sealing, as the dust acts as a deterrent to the chemical bind.

The SCS technology seals the pores by creating a mechanical lock with the subsequent layer, without the use of rubber dust. This chemistry creates a better bond minimizing porosity and the potential for delamination.

The seal coat is solvent free, two-component, thixotropic polyurethane-based on MDI. It is designed to completely seal base mat prior to topcoat application.

The topcoat is a UV stabilized, self-leveling, two-component polyurethane based on 100% MDI. The polyurethane is solvent free, "TDI Free", and contains no mercury, lead, or any other heavy metals as defined by the EPA. All polyurethane materials shall be made in the United States.

6. Line Marking Paint

The line marking paint shall be latex -based compatible with polyurethane synthetic track surfaces.

Part 5 – Execution

1. Sub-base

The Synthetic Track Surfacing System shall be laid on an approved sub-base. The General Contractor shall provide compaction test results of 95% or greater for the installed sub-base and asphalt or concrete surface.

For NCAA certification, the following criteria must be followed. The track surface i.e., asphalt substrate, shall not vary from planned cross slope by more than +/-0.1% with a maximum lateral



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slope outside to inside of 1% and a maximum slope of 0.1% in any running direction. The finished asphalt shall not vary under a 10' straight edge more than 1/8".

It should be the responsibility of the Asphalt-Paving Contractor to flood the surface immediately after the asphalt is capable of handling traffic, but within 24 hours. If, after 20 minutes of drying time, there are birdbaths evident, it shall be the responsibility of the Architect, in conjunction with the Synthetic Surfacing Contractor to determine the method of correction. No cold tar patching, skin patching or sand and oil mix patching will be acceptable.

Any oil spills (hydraulic, diesel, motor oil, etc.) must be completely removed, by either chipping out or removing and replacing with new, keyed in asphalt. The minimum depth of any asphalt replacement shall be 1".

The curing time for the asphalt is 14-21 days. It shall be the responsibility of the Synthetic Surfacing Contractor to determine if the asphalt substrate has cured sufficiently prior to the application of polyurethane surfacing system.

It shall be the responsibility of the General Contractor to determine if the asphalt substrate meets all design specifications, i.e. cross slopes, planarity and specific project criteria.

Upon completion of surface test and correction of any defects, Synthetic Surfacing Contractor shall submit to Engineer or Owner, a signed certificate stating the existing surface is acceptable and satisfactory for the installation of the track surface system.

2. Synthetic Track Surface

epiQ TRACKS X1000 is an impermeable synthetic surface of two-layer, sandwich-type construction. The base layer is paved in one course and comprises 80% by weight of ground black SBR rubber, not less than 1mm and not greater than 3mm in diameter. The binding agent shall be single component polyurethane compounded from Methylene Di-phenylene Diisocyanate (MDI) and/or Toluene Diisocyanate (TDI) with no solvent. The pigmented two-component polyurethane seal coat is squeegee-applied to the base before the surface layer is poured in order to make the system impermeable.

The topcoat surface layer, normally 3mm-4mm thick, contains 30-40% by weight of colored EPDM granules. The two-component, full pour polyurethane is compounded from a proprietary polyol blend and isocyanates based on MDI with no solvents added.

The surface is available in a range of colors. The total system standard thickness is 1/2" (13mm) and is built up of a base layer of 3/8" (10mm) with a 1/8" (3mm) thick surface layer. A 5/8" (16mm) thickness system is available.

epiQ TRACKS X1000 can be laid on any smooth, stable base such as asphalt or concrete. It



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forms a resilient, economical and durable surface that is resistant to UV degradation, abrasion, shrinkage, mold and most common oils and chemicals.

1. Curing

Before application of the synthetic surface can begin, the asphalt should be cured for at least 14-21 days and a concrete base for a minimum of 28 days.

2. Cleaning

The area to be surfaced shall be clean and free of any loose or foreign particles (dirt, oil, etc.) prior to commencement of the work. The surface is usually cleaned by use of a power blower and/or high-pressure washer.

3. Priming

The primer shall be spray-applied in accordance with the Manufacturer's specifications. Only those areas that can be installed within 24 hours should be primed.

4. Black Mat

Job mix formulas shall be as follows:

SBR Rubber	1mm-3mm
Binding Agent	18-20% of total rubber weight

The black SBR rubber granules and polyurethane binding agent are blended together using state of the art automatic metering mixer for a period of 2-3 minutes for a precise measured ratio. No hand mixing is allowed.

The blended materials are then, spread onto the asphalt/concrete base by means of a fully automatic paving machine with control sensors at a rate of 16-16.5 pounds per square yard. The fully automatic paving machine shall have a heated oscillating screed bar to obtain both smoothness and compaction. The heated screed bar normally works at a temperature of 158°F to 176°F.

The laying procedure shall be bay-to-bay and limiting the length of the passes to avoid having any cold (cured) joints between the bays. At the beginning of each new day's work, the traverse joint from the previous day's work shall be tack coated to ensure a good bond. Small irregularities, remaining in the surface after the fully automatic paving machine has passed, may be removed using a light polyethylene or Teflon roller or hand trowelled.



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The surface hardens through the reaction of the binding agent with humidity. The speed of the reaction depends on temperature and relative humidity. Usually, the surface may be walked upon the next day.

Synthetic track materials are to be placed only when temperature is above 45°F and rising.

No materials should be placed when surfaces are wet or damp, precipitation is falling or imminent, or when other unsuitable conditions for the installation of the system are present.

5. Impermeable Layer

The A and B polyurethane components are mixed at the prescribed ratio homogeneously using a fully automatic metering mixer. No hand mixing is allowed. The mixing process may last approximately 2-4 minutes per batch. This thixotropic coating is squeegee-applied onto the base mat, making the surface impermeable.

6. Top Surface Wearing Layer

The top layer shall consist of a self-leveling squeegee-applied, minimum 3mm layer of a UV stabilized two component polyurethane on to which pigmented EPDM granules are broadcast at a rate of approximately 7.5 pounds per square yard prior to the initial set.

After the cure is complete, the excess rubber granulate is removed by means of a mechanical sweeper. The EPDM granulate remaining embedded in the surface is approximately 5 pounds per square yard.

7. Line Markings

All line and event markings shall be applied by experienced personnel utilizing latex -based paint compatible with the synthetic track surfacing.

All marking dimensions will be certified in accordance with the specifications issued by the appropriate sanctioning or governing body such as IAAF, NCAA, NFHS or UIL, as applicable.

No striping operations may commence if temperature is 45°F and falling.

Do not place any paint under wet or damp conditions or when relative humidity is above 85%.

The line-striping machine shall be capable of producing neat, clean edges on all lines.





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Part 6 – Warranty

epiQ TRACKS X1000 is warranted against defects in workmanship, labor and materials under normal use and service for a period of sixty months. The warranty excludes any damage or defects caused by improper design or engineering, by an inadequate or defective base, by normal wear and tear, vandalism, abuse, neglect, lack of maintenance, or acts of God.

Part 7 – Installer

epiQ TRACKS X1000 shall be installed only by trained craftsmen who are full time employees. No outside Installer or Distributor will be sold or furnished **epiQ TRACKS** material for installation unless licensed by Manufacturer.

It is a requirement of this specification that the selected installer be required to supply proof of insurance and conformance to the Prevailing Wage Laws, if applicable for job site location.

Certified Installer

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