

SYNTHETIC SURFACING AND LINE MARKINGS FOR QC 1500SW

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions as previously specified, apply to this section.

1.2 SUMMARY

- A. The contractor shall furnish all materials, labor, tools, and equipment necessary for the installation of the synthetic track surface and line markings on all areas detailed in the contract drawings.
- B. Related Sections include the following:
 - 1. “Storm Drainage” for track and field drainage system
 - 2. “Hot-Mix Asphalt Paving” base for track surface
 - 3. “Aggregate” base for asphalt
 - 4. “Portland Cement” work for curbs and related areas

1.3 CODES AND STANDARDS

- A. Codes and standards follow the current guidelines set forth by the National Federation of State High School Associations (NFHS), the National Collegiate Athletic Association (NCAA) and the International Association of Athletics Federations (IAAF).

1.4 SUBMITTALS

- A. Submit three (3) sets of manufacturer’s product data sheets including installation guidelines and maintenance instructions.
- B. Submit three (3) representative track samples in the color of surfacing to be installed.
- C. Submit test reports that verify the manufacturer’s specifications (data) for the product to be installed.
- D. Submit documentation that verifies that the synthetic surfacing material does not contain any toxic or hazardous substance, which exceeds limits set forth by the EPA.
- E. Submit Material Safety Data Sheets (MSDS) for all individual components of the product being installed.
- F. Provide a letter stating that the surfacing contractor has reviewed the asphalt specification and accepts the specification as correct. Furthermore, the surfacing contractor shall provide a letter after checking the asphalt accepting it for synthetic surface installation. Should areas be found that do not meet specifications, they shall be repaired or replaced by the asphalt contractor prior to the synthetic surfacing contractor issuing its letter of acceptance.
- G. The synthetic surfacing material manufacturer shall submit a letter stating that the surfacing contractor is qualified to install its synthetic surface system.
- H. Submit three (3) copies of a detailed drawing showing location and color of all lane lines, start, finishes and all related markings for the owner to review at least four weeks prior to their application.

- I. Submit evidence that the synthetic surfacing contractor holds the necessary contractor's license to install synthetic surfacing.
- J. Submit evidence that the synthetic surfacing contractor is a current member of the American Sports Builders Association (ASBA).
- K. Submit evidence that the material manufacturer is ISO 9001 certified.
- L. System manufacturer must have a minimum of 6 IAAF tested and certified systems.

1.5 WARRANTY

- A. Provide a Five (5) Year Warranty against faulty workmanship and materials for the synthetic surface. The warranty period shall commence at final completion of the surfacing.
- B. A one (1) Year Warranty shall be provided for the line markings.

1.6 QUALITY ASSURANCE

- A. Provide a certificate of accuracy from a registered engineer, land surveyor or certified track builder by ASBA that the track measures 400 meters in all lanes from start to finish.
- B. Provide, as a part of the Warranty, documents stating that the materials applied conform to the manufacturer's specifications and that the material will not separate from the asphalt or concrete base, blister, bubble, fade, crack or wear excessively during the life of the warranty.
- C. The materials will not foam, thus causing air bubbles and reduce the life expectancy of the surface.
- D. The synthetic surfacing contractor and owner will annually walk and inspect the synthetic surface during the life of the warranty. Warranty issues will be repaired and for non-warranty items a method for correction will be presented.
- E. The synthetic surfacing contractor shall maintain a clean and orderly job site. All excess materials shall be removed from the construction area and properly disposed of. Scrap shall be removed in the same manner.

PART 2 - PRODUCTS

2.1 SYNTHETIC SURFACING

- A. The synthetic surfacing shall be a 13 mm thick, impermeable, sandwich system, with a paved in place rubber granule and polyurethane binder base layer sealed to render it impermeable. The surface finish is embedded granular EPDM.

2.2 PREQUALIFIED PRODUCT

- A. Quality Court Industries, LLC., QC1500SW (sandwich system embedded finish)
 Contact: Mike Stewart 1-225-774-9974
 e-mail: mike@qualitycourt.com
- B. Prequalified Equal

2.3 PROPERTIES *

PHYSICAL PROPERTY	REQUIREMENT
Force Reduction (IAAF)	35-50%
Modified Vertical Deformation (IAAF)	0.6-2.2 mm
Friction (wet) (IAAF)	≥ 0.5

Friction (dry) (DIN)	≤ 1.1
Tensile Strength (IAAF)	≥ 0.5 N/mm ²
Elongation (IAAF)	≥ 40%
Thickness (DIN)	≥ 13 mm
Spike Resistance (DIN)	Class 1

* all technical figures given are taken from the related test reports and refer to the main products. Therefore, depending on the substrate and application conditions, or in the case of using alternative products, results may vary.

2.4 SYSTEM COMPONENTS

- A. Polyurethane Primer shall be mixed 50/50 specifically for priming concrete/asphalt prior to installation of polyurethane coating. Primer is also used to prime cured polyurethane prior to the application of a new layer, when necessary.
- B. Polyurethane Binder shall be a single component, **100% polyurethane**, moisture curing, middle viscosity polyurethane binding agent based on MDI/TDI. The level of the tolylene diisocyanate monomer is very low, less than ½ of 1%. Importantly the binder contains no solvents and no extenders (plasticiser).
- C. Polyurethane Coating shall be a two component self-leveling colored polyurethane coating (polyol and isocyanate) containing no solvents, TDI, or mercury. The mix ratio, by weight, is 100 parts A to 61 parts B.
- D. Polyurethane Pore Filler shall be a two component thixotropic colored polyurethane containing no solvents, TDI, or mercury. The material is supplied in working packs for accurate measuring. (XX equals color of liquid materials)
- E. SBR Rubber – SBR rubber granules shall be recycled black rubber that is processed and graded to 1-4 mm in size containing no fiber or metal and contains less than 4% dust.
- F. EPDM Rubber – EPDM colored virgin rubber granules that are processed and graded to 1.0 – 3.5 mm or as specified. The rubber shall contain a minimum of 20% EPDM and be approved by the resin manufacturer. The specific density shall be 1.60 +/- 0.08 and Shore A hardness of 60.
- G. EPDM rubber dust is a residual product made from the excess granules listed in F above. The material is 0.0 – 0.5 mm in size.

PART 3 EXECUTION

3.1 ASPHALT AND CONCRETE PREPARATION

- A. It is the responsibility of the asphalt-paving contractor to provide documentation that the paving meets those requirements set forth for asphalt paving. Additionally, the asphalt is to cure for a minimum of 28 days prior to synthetic surfacing being applied. Asphalt compaction tests are to be provided showing a compaction of 95% or greater. The asphalt will be checked with a 10 foot straight edge in all directions. Those areas not in conformance will be repaired and/or replaced by the paving contractor. Flooding the asphalt surface to locate irregularities is highly recommended.
- B. All concrete work is to cure for a minimum of 45 days. No curing agents are to be used. Any concrete flat work such as run ups etc will be checked as in 3.1.A.
- C. All areas to receive synthetic surfacing are to be clean and free of any loose particles or foreign substances such as dirt, oil, grease, etc.

3.2 INSTALLATION OF QC 1500SW SURFACING

- A. Primer - All asphalt and concrete is primed using a mixture of polyurethane binder and solvent such as butyl acetate (1:1 w/w). Application rate is approximately 0.28 lbs/sy. Only the area to be covered within the working day should be primed to ensure a good bond to the base. Concrete base may require additional coating based on absorption rate of applied primer.
- B. Base Layer – The base layer is a mixture of 1-4 mm SBR black rubber granules mixed in a mechanical mixer with polyurethane binder. The materials are mixed until homogeneous. Mixing ratio is 100 parts rubber to 20 parts polyurethane. The prepared rubber and polyurethane is then paved in place using a heated mechanical screed paver, specially designed for this work, to an approximate depth of 10-11 mm using approximately 15.50 lbs/sy of mixed material.
- C. Seal Coat – The base layer is sealed by scraping a thixotropic mixture of seal coating onto the surface to render it impermeable. The sealed surface must be checked for pin holes prior to further application. The seal coat consumption is approximately 2.21 lbs/sy of double mixed Stobielast 128.22.
- D. Top Layer – One application of double mixed polyurethane coating at approximately 3.87 lbs/sy is applied on top of the base layer with a notched squeegee. After the material has self leveled and is still liquid, colored 1.0-3.5 mm EPDM rubber granules are broadcast into the surface to excess. After curing (hardening) the excess colored EPDM granules are removed. Then approximately 5.00 lbs/sy of EPDM will remain in the colored polyurethane.
- E. All methods for mixing of products are to be approved by Stockmeier Urethanes USA, Inc. and can be found on their Technical Data Sheet (TDS)
- F. All labor shall be full time employees of the surfacing contractor.

3.3 LINE MARKINGS

- A. All line marking paint is to be approved by the synthetic surfacing manufacturer.
- B. All markings will be in accordance to the desires of the owner. See 1.3.A.

3.4 SPECIFIC SLOPES

- A. Concrete curbs - All top elevations of any continuous concrete curbs shall be a constant elevation.
- B. Track oval – running direction 0.1 %; lateral slope 2.0 % max. NFHS, 1% NCAA and IAAF.
- C. D areas (high jump) – towards cross bar 1 % downward
- D. Run ups same as oval unless located in the “D”.

END OF SECTION