

SECTION 32 2000

RESILIENT TRACK SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 31 Section "Earth Moving" for soils sterilization.
 - 2. Division 32 Section "Asphalt Paving for asphalt paving."

1.2 SUMMARY

- A. Base mat track work consists of installation of a section of track (new asphalt surface) as illustrated in the drawings.
- B. Structural spray and re-stripe entire track, D area and jump runways.
- C. Re-stripe shall match existing striping. Consult with coaches to confirm layout and colors.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Weather: Construct resilient track surfacing only when the surface area is dry, the weather is not rainy, and the temperature of the material and ambient air is at least 45 deg F.

1.4 SUBMITTALS

- A. Certification: Upon request, submit documents to the Architect certifying that the resilient track surfacing subcontractor has installed this type of surfacing, and is qualified to do this type of work. The installer shall be approved by the material supplier to install the track system. The manufacturer shall have installed a minimum of three tracks using the material specified. The installer shall have installed a minimum of one track. Provide reference projects, contact name, and contact phone number for representative track installations. If the installer has installed less than three tracks, the manufacturer shall have a representative on the site with experience in the installation of the type of surface specified.
 - 1. The Owner may reject any subcontractor that does not meet the qualifications stated herein. Under no circumstances will additional costs be approved to replace a non-qualified contractor.
 - 2. Contractors may submit qualification documents to the Architect prior to ten days before the Bid Opening date for Architect's review and approval. Documents submitted after ten days before the Bid Opening may or may not be reviewed, at the Architect's discretion.

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- B. Layout Certification: Submit documents to the Architect-Engineer certifying that the paint striping as installed meets the dimensions shown on the Drawings and The Course Measurement Requirements of Rule 5, Section 2, of the latest edition of the National Federation of State High School Associations Track and Field Rule Book.
- C. Shop Drawings: Submit track layout drawing to match existing striping for approval by school officials.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: *The General Contractor shall employ a Certified Track Builder as certified by the American Sports Builders Association* who has completed resilient track surfacing similar in material, design, and extent to that indicated for this Project, that is acceptable to the manufacturer, and whose work has resulted in installations with a record of successful in-service performance.
- B. Pre-installation Conference: Conduct conference at the Project site. Comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to resilient track surfacing system including, but not limited to, the following:
 - 1. Review methods and procedures and asphalt installation requirements related to resilient track installation, with the asphalt installer and Owner, including manufacturer's written instructions.
 - 2. Coordinate with asphalt paving installer for asphalt surface tolerances to ensure asphalt substrate conditions and finishes are met for compliance with requirements, including flatness, slope, and imperfections.
 - 3. Be available on-site during asphalt paving installation and review track installation and any repair procedures after installation.

1.6 WARRANTY

- A. Resilient surfaces shall be warranted for a period of five years from the date of Substantial Completion against defects in materials and workmanship including defects such as delamination, bubbling, cracking, loss of integrity or excessive wear. The manufacturer shall review the asphalt pavement mix design and installation and accept the base before installation of the surfacing. The manufacturer shall immediately notify the Contractor and the Architect-Engineer of any deficiencies in the asphalt pavement mix design upon award of the Contract. The guarantee does not cover vandalism, neglect, improper care, improper footwear, or acts of God. The manufacturer's recommendations for maintenance shall be followed. The manufacturer shall submit full and complete maintenance instructions to the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers/Installers: Subject to compliance with requirements, provide products by one of the following:
 - 1. McConnell & Associates; 816-842-6066.
 - 2. Fisher Tracks, Inc.; 515-432-3191.

3. Beynon Sports Surfaces, Inc.; 410-771-9473.

2.2 STRUCTURALLY SPRAYED BLACK MAT SYSTEM

- A. Product: Poured in place polyurethane and rubber running track system. Industry standard thickness of 1/2 inch. Permeable running track system consists of the following:

1. Base primer.
2. 10 MM EPDM or SBR rubber and polyurethane shock mat.
3. 3 mm textured coat.
4. Line striping.
5. Basis of Design: Spurtan BS, Beynon BSS 100 or approved equal.

- B. Materials:

1. Primers: 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 (styrene Butadiene Rubber) rubber, processed and chopped to 1-3 mm size containing less than 4% dust.
3. EPDM Granules: The rubber granules for the structural spray wearing coats shall be EPDM peroxide cured, man-made rubber containing a minimum of 20% EPDM and having a specific gravity of 1.5 ± 0.1 . The EPDM rubber will be 0.5mm to 1.5mm EPDM granules. EPDM granules shall be of the same color as chosen by the owner for the track surface.
4. Polyurethane Binder: Binder for the black rubber mat shall be an MDI-based mono-component, polyurethane binding agent. The binding agent shall not have a free TDI monomer level above 0.2%, must be clear in color, not milky, and must be solvent free. The binding agent must be specially formulated for compatibility with SBR stranded or rubber crumb.
5. Structural Spray Coating: The spray coating shall be the MDI-based mono-component, moisture cured, pigmented polyurethane, specifically formulated for compatibility with EPDM granules. The finish coat shall include ultraviolet inhibitors added to protect the surface. The coating shall be the color red.
6. Line Marking Paint: The line marking paint shall be polyurethane-based paint specifically manufactured to be compatible with polyurethane synthetic track surfaces.

- C. Execution:

1. Sub-Base: The Synthetic Track Surfacing System shall be laid on an approved sub-base.
 - a. For National Federation of State High School Association's (NFHS) 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 slope outside to inside of 2% and a maximum slope of 0.1% in any running direction. The existing asphalt shall not vary under a 10' straight edge more than 1/4 inch.
 - b. Any oil spills (hydraulic, diesel, motor oil, etc.) must be completely removed, either by chipping out or removing and replacing with new, keyed in asphalt. The minimum depth of any asphalt replacement shall be one inch. It shall be the responsibility of the surfacing contractor to determine if the asphalt substrate has cured sufficiently prior to the application of polyurethane surfacing system.

- c. Concrete runways and/or "D" areas that are to be surfaced with the synthetic running surface system shall NOT contain curing agents that reduce adhesion of the synthetic surfacing system to the concrete. Coordinate specific requirements regarding concrete mixture and surfacing requirements directly with the Concrete installer.
 - d. It shall be the responsibility of the Contractor to determine if the asphalt substrate meets all design specifications, i.e. cross, planarity and specific project criteria. After all the above conditions are met, the synthetic surfacing contractor must, in writing, accept the planarity of the asphalt-receiving base, before work can commence.
 2. Curing: Before application of the synthetic surface can begin, all new asphalt patches shall be cured for at least 14 days, and a concrete base a minimum of 28 days.
 3. 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.
 4. Priming: The primer shall be spray-applied in accordance with the manufacturer's specifications. Only those areas that can be installed the same day should be primed.
 5. Mixture Composition: Job mix formulas shall be as follows:
 - a. Black Mat: Manufactured from polyurethane binder and industrial grade rubber. The polyurethane and rubber shall be mixed in a continuous mixer M-6000 at a ratio of 14.5 lb. EPDM rubber to 3.19 lb. of polyurethane. Bath mixing will not be allowed. Shock mat shall be applied with a sports paver specifically designed for running surfaces with a heated vibrating screed. SMG Plano Matic, 1993 or approved equal. Industrial grade rubber granules processed to a size of between 1mm to 4mm free of fabric and foreign material with less than 3% dust. Recycled tire rubber will not be allowed. Moisture content shall not be more than 3%.
 - b. Structural Spray Texture Coat: Using a structural spray machine, apply a mixture of polyurethane and EPDM rubber. This mixture shall be 60 parts colored polyurethane to 40 parts 0.5 mm to 1.5 mm rubber granules by weight. The polyurethane and rubber shall be completely mixed to insure complete encapsulation of each granule. Spray apply a minimum of 2 coats, each coat shall be 1.8 lb per square yard. The minimum amount of polyurethane and rubber for the spray coat shall be 3.6 lb. per square yard.
 6. Line Markings: All line and event markings shall be applied by experienced personnel utilizing two-part urethane-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, NFSHSA, etc.
 - a. Engineer's pins shall be buried 9 inches deep at both radius points. All markings in the curves shall be laid out with a theodolite and shall be accurate to within 20 seconds of 1 degree. A typical transit is not considered suitable for layout. Straights shall be laid out and marked using a steel engineer's tape with proper allowances for temperature.
 7. Physical Properties (ASTM):
 - a. Thickness: 1/2 inch (12-13 mm) or as specified.
 - b. Shore A Hardness (ASTM D-2240): 55 ± 5 .
 - c. Elongation at Break (ASTM D-412): Approximately 90%.
 - d. Tensile Strength (ASTM D-412): 0.75 N/mm^2 at 70 degrees F.

- e. Compression Set Recovery (ASTM D-412): 90% to 95% at 70 degrees F. over a 24-hour period.
- f. Abrasion Resistance (ASTM D-501): 0.25 grams loss after 1000 cycles.
- g. Chalking (ASTM D-822): No change after 1000 hours in weather meter.
- h. Coefficient of Friction (ASTM D-1984):
 - 1) Dry: 0.70 to 0.75.
 - 2) Wet: 0.60 to 0.65.
- i. Resilience (ASTM D-2632): 37% to 39%.
- j. Tear Resistance (ASTM D-624): 50 - 65 psi.
- k. Color: Red.

2.3 ASPHALT PAVEMENT

- A. Asphaltic base and leveling course shall meet specified tolerances prior to installation of resilient track surfacing.

2.4 CONCRETE PAVEMENT

- A. Concrete Runways and/or "D" Area, shall meet specified tolerances prior to installation of resilient track surfacing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Install asphalt paving base and leveling course as specified on the Drawings. In addition to tolerances specified, continue testing of leveling course by flooding the surface with water. Remove roller marks and depressions that hold water deeper than the thickness of a nickel. Repair depressions by removing leveling course and replacing to specified levels. Grind roller marks to re-establish drainage. Repairs to the leveling course shall meet the requirements of the resilient paving manufacturer.
- B. Inspect existing paving base and patch surfaces for compatibility with new surfacing. Notify Architect in writing of any unsuitable conditions prior to surfacing installation. Installation of new surfacing constitutes surfacing installer's acceptance of substrate.
- C. Clean the surfaces to receive resilient track surfacing of oils, dirt, and material deleterious to the resilient track surfacing. Clean the surface using pressure washers. The Contractor shall coordinate who cleans the asphalt surface.
- D. Allow new asphalt to cure a minimum of 14 days or as required by the track surfacing manufacturer before laying resilient track surfacing.
- E. Notify the Architect-Engineer at least 72 hours in advance of initial laying of resilient track surfacing. The Architect-Engineer will be present at the jobsite during initial laydown operations.

- F. Lay resilient surfaces during daylight hours.
- G. Use high pressure blowers to remove dirt, dust, and debris from all surfaces to be coated with structural spray.
- H. A representative of the track surfacing manufacturer shall be present during layout operations.

3.2 INSTALLATION OF POLYURETHANE-BOUND RUBBERIZED SURFACING

- A. Provide a sharp cutting tool to cut back and remove existing track surfacing designated to be replaced.
- B. Spray on a polyurethane primer compatible with the asphalt base. Apply at rates recommended by the manufacturer. Mask areas which are not to be coated.
- C. Installation of the base mat shall be applied by mechanical means where possible, hand troweling smaller areas to be repaired is acceptable. The blended base materials shall be applied to the substrate using a mechanical screed finisher. The screed bar must be electronically heated. All hand rollers shall be electronically heated, if used.
- D. All joint work shall be troweled flush with adjacent base mat. Cured joints shall have their edges primed with the base mat priming agent prior to application of the base mat repair material.
- E. The pot life of the base mat material mixture shall be not less than 60 minutes from the time of the completed mix. All trowel work shall be completed within this time. Any areas that are rough, high, uneven, or open in texture shall be sanded and filled prior to any finish work and application of structural spray.
- F. Structural Spray Texture Coating: Using a structural spray machine, apply a mixture of polyurethane and EPDM rubber. Mixture shall be 60 parts colored polyurethane to 40 parts 0.55 mm to 1.5 mm rubber granules by weight. The polyurethane and rubber shall be completely mixed to ensure complete encapsulation of each granule. Spray a minimum of two (2) coats in two directions, 90 degrees from each other. Each coat shall be 1.8 lbs. per square yard. The minimum amount of polyurethane and rubber for the spray coat shall be 3.6 lbs. per square yard.
- G. Apply a final coat of U.V. resistant urethane at the rate of 0.05 gallon per square yard minimum.
- H. The above installation techniques are general in nature. The manufacturer's instructions shall be followed during installation.

3.3 LINE PAINTING

- A. Line painting shall be done by a workman experienced with the painting of track lines and the type of material being used. Clean the surface of dirt, grease, or other objectionable material. Actual painting of the lines shall be according to the manufacturer's requirements. Lines shall be sharp and free of overspray.

3.4 FIELD QUALITY CONTROL

- A. Test profile, grade, and tolerances of finished surface. Correct variations to meet the manufacturer's recommendations.
- B. Densities shall be according to the manufacturer's recommendations.

END OF SECTION 32 2000