

Mclane HIGH SCHOOL
SECTION 32 18 23
SYNTHETIC TRACK RESURFACING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Principal Work Items Are:

1. The synthetic surfacing contractor shall furnish all labor, materials, equipment, supervision, and services necessary for the proper completion of repairs and resurfacing of existing track system and related work specified herein.
2. **Basis of design is Beynon BSS 200WB** Sealed track system with water-based structural spray application or approved equal.
3. Only written approval of District will permit substitutions for materials specified. Refer to Fresno Unified School District's General Conditions and General Requirements, Substitutions, for procedure.
4. **Base bid shall include 20 square yards** of repairs, which includes removal of existing surfacing down to existing asphalt, and replacement with Beynon BSS 200WB system to match height of existing track.
5. **Bid Item 'B'** shall be used to establish unit cost per square yard of complete replacement of track surfacing per item 1.01.A.4 above and all requirements herein. Unit cost shall be used to adjust contract price for actual quantities removed and replace.
6. The contractor shall verify all quantities of existing synthetic surfacing to receive new seal and structural spray.
7. All existing surfacing material that is loose and flaking shall be removed. The contractor shall verify all quantities of existing synthetic surfacing that exhibits damage related to flaking or damage requiring repair in order to create a stable system.
8. Layout and paint all track lines and event marking to match existing and as required and specified by owner and the applicable governing body for the specified product; current NFSHSA and CIF rules.

1.02 RELATED SECTIONS & EXHIBITS:

A. Section 32 18 23.60 – Synthetic Track Line Markings

B. Site Key Plan

C. Overall Site Plan

1.03 QUALITY ASSURANCE

A. Contractor and Manufacturer Qualifications

1. The contractor must have a minimum of 5 years of experience in successfully installing base mat/seal coat/structural spray running tracks and shall have installed a minimum of 8 complete polyurethane running track surfacing systems in the past 3 years.
2. The Manufacturer must have a minimum of 8 years experience with compound two-part polyurethane for athletic surfaces.
3. The contractor must provide letter from synthetic surfacing manufacturer certifying that the contractor is a qualified and approved installer. Contractor shall submit reference information for verification at time of bid or within 24 hours of request.
4. The contractor is required to provide documentation that shows the selected specified and installed product meets current IAAF Performance Standards for Synthetic Surfaced Athletics Tracks (Outdoor) and is certified in terms of the IAAF certification system as updated to present day.
5. Codes and standards follow the current guidelines set forth by the International Amateur Athletic Federation (IAAF), the National Collegiate Athletic Association (NCAA) and the National Federation of State High School Associations (NFSHSA), along with the current material testing guidelines as published by the American Society of Testing and Materials (ASTM).
6. All polyurethane components must be manufactured in the United States in an **ISO 9001:2008 Certified** facility to ensure the highest quality materials.
7. **All products and materials must be approved for use in the state of California.**

B. SUBMITTALS

1. Standard printed specifications of the synthetic track surfacing products to be installed on this project.
2. An affidavit attesting that the synthetic track surfacing material to be installed meets the requirements defined by the manufacturers currently published specifications and any modifications outlined in those technical specifications.
3. A synthetic track surfacing system sample, 4" x 6" (min.) in size, of the same synthetic track surfacing system to be installed on this project.

4. A list of completed facilities, including the installing supervisor, of the exact synthetic track surfacing system being installed.
5. A current IAAF Certificate proving the product to be installed meets the current IAAF Performance Standards for Synthetic Surfaced Athletic Tracks (Outdoor).
6. A copy of Manufacturer and Installer product and installation warranties.
7. Operation and Maintenance Manuals: Two (2) electronic CDs shall be submitted to District prior to completion of project.
8. Upon completion of the installation, the owner shall be supplied with all necessary computations and drawings as well as a letter of certification attesting to the accuracy of the markings.

C. DELIVERY, STORAGE, AND HANDLING

1. The contractor must coordinate delivery and storage of materials with the Owner prior to shipping.
2. Materials must be protected at the job site to ensure that they do not become contaminated by other materials, vandalized, or stolen.
3. Materials must not be placed in such a way to obstruct any activities adjacent to the field or any paths of travel adjacent to the installation site.

PART 2 – PRODUCTS

2.01 Synthetic Surfacing

- A. Beynon BSS 200WB Seal and Structural Spray system, or equal.
- B. System must be IAAF approved, impermeable polyurethane synthetic track system comprised of polyurethane bound SBR Rubber granules, BEYPUR 200 impermeable two-component urethane seal coat layer, topped with BEYPUR 160, a water-based single component polyurethane structural spray with EPDM granules.

2.02 The synthetic surfacing system must meet the following requirements:

- A. The synthetic surfacing must meet all current guidelines and requirements set forth by the International Amateur Athletic Federation (IAAF), the National Federation of State High School Associations (NFSHSA), along with the current material testing guidelines as published by the American Society of Testing and Materials (ASTM).
- B. The **BSS 200 WB** Track Surfacing Seal and Respray shall exhibit the following minimum performance standards as required by IAAF:
 1. Thickness \geq 13mm
 2. Force Reduction 3 5 to 50%

3. Vertical Deformation	0.6 to 2.5mm
4. Coefficient of Friction	≥ 0.5 (47 TRRL Scale)
5. Tensile Strength	≥ 0.5MPa
6. Elongation at Break	≥ 40%

- C. All visible components of system must be Beynon Red B62 in color or approved equal. Physical sample of exact color is required for District approval.
- D. Primers must be polyurethane-based, specifically formulated to be compatible with the paved-in-place SBR base, and track surfacing material.
- E. The rubber granules for the base mat shall be recycled SBR rubber, processed and chopped to 1-3mm size, containing less than 1% dust.
- F. The rubber granules for the BEYPUR structural spray wearing coats shall be EPDM peroxide cured, synthetic rubber containing a minimum 20% EPDM resin, with a specific gravity of $1.5 \pm 0.1 \text{ g/cm}^3$. The EPDM rubber shall be the same color as chosen by the owner for the track surface.
- G. Binder for the black mat shall be BEYPUR, an MDI-based single-component, polyurethane binding agent. The binder shall not have a free TDI monomer level above 0.2% and must be solvent free. The binder must be specially formulated for compatibility with SBR rubber crumb.
- C. The structural spray coating shall be BEYPUR 160, a water-based single-component pigmented polyurethane, specifically formulated for compatibility with EPDM granules. The coating shall be the color specified by the owner. Pigment integrated in the field shall not be allowed.
- H. BEYPUR 200, the two-component polyurethane resin for this application, shall be pigmented to match the color of the wear coat. The material shall be applied by a squeegee to ensure that the existing track surfacing and new areas of black mat are sealed.
- I. All line and event markings shall be applied by experienced personnel utilizing a single-component, moisture cured, aliphatic polyurethane paint compatible with the synthetic track surfacing.
- J. Synthetic surfacing installer must notify District prior to bidding and installation of any discrepancies that exist between contract documents and manufacturer's requirements.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. A technical representative for the polyurethane product manufacture must be available to provide onsite technical services during the installation of the track surface if requested by the Owner.

- B. Synthetic Surface installer must verify and accept asphalt pavement for stability, strength, and surface preparation, and shall immediately notify District of any discrepancies.
- C. The entire track surface must be clean and free of all dirt, oil, grease or any other foreign matter. The Synthetic Surface Installer must thoroughly clean and/or pressure wash all areas of the track surface as necessary to ensure adhesion of the surfacing material.
- D. All event lines and marking shall match existing.
- E. The Synthetic Surface installer must protect existing conditions as needed during installation of surfacing.

3.02 INSTALLATION

- A. The synthetic surfacing installer must maintain the stability, planarity, and grades of the asphalt pavement and surrounding existing surfaces. The synthetic track surfacing installer is responsible for the repair of existing surfaces if they are damaged due to actions of the installer.
- B. A technical representative for the polyurethane product manufacturer must be available to provide onsite technical services during the installation of the track surface if requested by District.
- C. The Synthetic Surfacing Installer must strictly adhere to the installation requirements and recommendations of the manufacture and these specifications
- D. The Base Course SBR granules and BEYPUR shall be mixed together on site to regulate the ratio/quantity of SBR, not to exceed 82% in the base mat portion of the system. The BEYPUR 200 shall be mixed with the SBR rubber so that a minimum of 20%, by weight, exists in the final mixture. This mixture is then mechanically installed using the paver.
- E. Application of seal coat with the two BEYPUR 200 components, or equal, which are mixed at the prescribed ratio homogeneously with a suitable mixing device. The coating is squeegee applied to the base mat, making it impermeable.
- F. The Wear Course consists of 0.5 to 1.5mm EPDM granules which shall be integrated into the BEYPUR 160 structural spray. The structural spray shall be made in (2) two uniform applications.

PART 4 - SITE CONDITIONS

- A. Installation shall not take place if adjacent or concurrent construction generates excessive dust, abrasives, or any other by-product that, in the opinion of the installer, would be harmful to the track material, until completion of such works.
- B. Apply Synthetic Track Surfacing in dry weather when pavement and atmospheric temperatures are fifty (50) degrees Fahrenheit or above and are anticipated to

remain above fifty (50) degrees Fahrenheit for twenty-four (24) hours after completing application.

- C. The maximum temperature cannot exceed 105 degrees at any point during a 24 - hour period.
- D. Rain cannot be falling. If there is a threat of rain, work shall cease until dry conditions can be re-established on the track pavement. Work is to proceed only when adequate curing can be guaranteed by the manufacturer.

PART 5 - WARRANTY AND INSPECTION

- A. The synthetic track surfacing installer must provide the following warranty:
 - 1. The warranty must cover all defects in workmanship, labor and materials under normal use for a period of five (5) years.
 - 2. The warranty must not have any qualifications or exclusions limiting total time of use, athletic level, or any other intended purpose.
 - 3. As requested by the District, the synthetic track surfacing installer must, in the presence of the owner, inspect the track surfacing once a year until the end of the warranty period, at specific dates requested by owner. Any defects in workmanship or materials (at no fault of the owner) must be repaired at the expense of the Synthetic Surfacing Contractor to the satisfaction of the owner.
 - 4. All surfacing warranties must be non-prorated, must include all necessary materials, labor, transportation costs, etc., to complete repairs.

END OF SECTION

MCLANE HIGH SCHOOL
SECTION 32 18 23.10
SYNTHETIC TRACK LINE MARKINGS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish labor, materials, apparatus, tools, equipment, transportation, temporary construction and special occasional services as required to install track and field line markings at newly installed synthetic track surfacing.

1.02 RELATED SECTIONS & EXHIBITS:

1. Section 32 18 23 – Synthetic Track Surfacing
2. Site Key Plan
3. Overall Site Plan

1.03 CODES AND STANDARDS

- A. Codes and standards shall comply with current guidelines set forth by the **NFHS and CIF**.

1.04 SUBMITTALS

- A. Following information shall be submitted prior to installation of specified work:
1. A list depicting colors of line markings and labels of events to be included for approval prior to installation. The list will be based on the approved color selected at the time of bid opening.
 2. Symbols and markings shall be clearly identified, illustrated, and their colors stated.
 3. Installation process and requirements for line markings and any conditions that may limit installation or affect quality of installation.
 4. Material safety data sheets on products to be used.
- B. Following information shall be submitted at completion of specified work:
1. Upon completion of line markings, contractor shall submit to Owner a five (5) diagram/drawing depicting and identifying line markings including: 1) a key to the color codes, 2) a chart for symbols, and 3) labels for all events.
 2. Full track certification measurements, including all event and all lane lengths as installed and measured in the field. This certification must be signed by line marking installer.

PART 2 – PRODUCTS

2.01 PAINT

- A. Paint used on Track & Field Synthetic Surfaces must be polyurethane based.
- B. Temporary reference markings must be removed at completion of project.
- C. **All products and materials must be approved for use in the state of California.**

PART 3 – EXECUTION

3.01 SUMMARY

- A. General line markings of the 400-meter track and field events shall be spray applied, using only paint, primers and finishes supplied and guaranteed by approved manufacturers and/or suppliers which are compatible with new synthetic track surfacing system.
- B. Markings must be in accordance with rules of **NFHS and CIF** and must be certified for accuracy. **NFHS** color code shall be followed, unless otherwise modified herein.
- C. No line markings shall be installed if weather conditions are not proper; i.e. too windy, wet, cold or hot.

3.02 LINE MARKINGS

- A. Paint.
 - 1. All line markings to receive a minimum of two (2) coats of paint.
- B. Measure Line (Theoretical – not painted)
 - 1. Contractor to verify if a regulation curb is utilized prior to providing shop drawing.
 - 2. Distance to right hand edge of the inside lane line of Lane 1 to be 30 cm or 20 cm from the measure line, depending on use of the regulation curb.
- C. Line Precedence
 - 1. Lane lines to take precedence over other markings.
 - a. Numbers and letters to be broken at all lane line intersections.
 - 2. Waterfall starting lines take precedence over straight starting lines.
 - a. Straight starting lines to taper at waterfall starting lines – maintain a ½" gap.
- D. Chute Extensions
 - 1. Chute extension lines to be solid not dashed when outside the track oval lane lines.
 - 2. Chute extension lines to be dashed when within the track oval lane lines.

E. 100 Meters

1. Two directions home straightaway.
2. Event label is 100, is 4" high, is located in the outside lane and is above the starting line.
3. Color of starting line is white.
4. Chute extension lines to be solid lines broken at each oval curve line (4" break).

F. 100 Meter Hurdles

1. Two directions home straightaway.
2. Event label is 100, is 4" high, located in the outside lane, and is above the starting line.
3. Color of the starting line is white and the hurdle tic marks are yellow.
4. Hurdle tic marks are a 2.5" wide by 3" high triangle, the triangle is pointing in the direction of running. Each lane shall have 2 tic marks with each tic mark adjacent to the lane line, but not touching the lane line.
5. Chute extension lines to be solid lines broken at each oval curve line (4" break).

G. 110 Meter Hurdles

1. Two directions home straightaway.
2. Event label is 110, is 4" high, is located in the outside lane, and is above the starting line.
3. Color of the starting line is white and the hurdle tic marks are blue.
4. Hurdle tic marks are a 2.5" wide by 3" high triangle, the triangle is pointing in the direction of running. Each lane shall have 2 tic marks with each tic mark adjacent to the lane line, but not touching the lane line.
5. Chute extension lines to be solid lines broken at each oval curve line (4" break).

H. 200 Meters

1. All in lanes, both curves (Reverse).
2. Event label is 200, is 4" high, is located in lane 2, and is above the starting line.
3. Color of the starting line is white. Color of reverse starting line is black.

I. 300 Meter Hurdles

1. All in lanes.
2. Event label is 300, is 4" high, is located in lane 2, and is above the starting line.
3. The starting line is white in color and located on the track oval. The hurdle tic marks are red.
4. Hurdle tic marks are a 2.5" wide by 3" high triangle, the triangle is pointing in the direction of running. Each lane shall have 2 tic marks with each tic mark adjacent to the lane line, but not touching the lane line.

J. 400 Meters

1. All in lanes.
2. Event label is 400, is 4" high, is located in lane 2, and is above the starting line.

3. Color of the starting line is white.

K. 800 Meters

1. Waterfall start and 1 turn stagger.
2. Event label is 800 M, is 4" high, the 1 turn stagger starting line is located in lane 2, the waterfall starting line is located in the outside lane, and the labels are above the starting line.
3. Color of the 1 turn stagger starting line is white with a green insert.
4. The color of the waterfall starting line is green.

L. 1600 Meters

1. Waterfall start.
2. Event label is 1600, is 4" high, is located in the outside lane, and is above the starting line.
3. Color of the starting line is white.

M. 3200 Meters

1. Waterfall start.
2. Event label is 3200, is 4" high, is located in the outside lane, and is above the starting line.
3. Color of the starting line is white.

N. 400 Meter Relay

1. All in lanes.
2. Event label is 400 M, is 4" high, is located in lane 2, and is above the starting line.
3. Color of the starting line is white, same starting line as the staggered starting line for the 400 meters.
4. The relay exchange zone markers are yellow and the acceleration zone marker is yellow.
 - a) Exchange zone markers are 36" wide by 18" high triangles, the two triangles point into the relay exchange zone, and the triangles are included in the 20-meter zone.
 - b) Acceleration zone mark is 6" wide by 6" high triangle; one triangle per lane, 10 meters before the exchange zone marker, and the triangle is included in the 10-meter acceleration zone.

O. 800 Meter Relay

1. All in lanes.
2. Event label is 800R, is 4" high, is located in lane 2, and is above the starting line.
3. Color of the starting line is black.
4. The relay exchange zone markers are white and the acceleration zone marker is white.
 - a) Exchange zone markers are 36" wide by 18" high triangles, the two triangles point into the relay exchange zone, and the triangles are included in the 20-meter zone.
 - b) Acceleration zone mark is 6" wide by 6" high triangle; one triangle per lane, 10 meters before the exchange zone marker, and the triangle is included in the 10-meter acceleration zone.

P. 1600 Meter Relay

1. Three turn stagger.
2. Event label is 1600R, is 4" high, is located in lane 2, and is above the starting line.
3. Color of the starting line is white.
4. The relay exchange zone markers are blue.
 - a) Exchange zone markers are 36" wide by 18" high triangles, the two triangles point into the relay exchange zone, and the triangles are included in the 20-meter zone.

Q. 3200 Meter Relay

1. Three turn stagger.
2. Event label is 3200R, is 4" high, is located in lane 2, and is above the starting line.
3. Color of the starting line is white.
4. The relay exchange zone markers are green.
 - a) Exchange zone markers are 36" wide by 18" high triangles, the two triangles point into the relay exchange zone, and the triangles are included in the 20-meter zone.

R. Finish Lines

1. Located at the southwest, northwest and northeast points of curvature (PC)
2. 2" wide, and white in color
3. The intersection of the finish line with the lane lines shall be alternating: inside of lane 1 - 2" x 2" black square, inside of lane 2 - a black line-white line-black line (total size is 2" x 2" and the black lines are parallel to the lane lines), inside of lane 3 - 2" x 2" black square, etc.
4. No lean lines are to be provided

S. 1st Turn Break line

1. 2" wide, white when it is also a finish line, otherwise it is green.

T. Box Alleys

1. Provide 1 turn box alley starts for the following events:
 2. 800M
 3. 1600M
 4. 3200M
5. Box 1 to be lanes 1-4
6. Box 2 to be lanes 5-8

U. Interval Marks

1. Provide a 2" wide white line on the inside of the track oval extending from the inside edge of the inside Lane 1 line approximately 4" long.
2. These lines are to be at 50 meter intervals starting at the common finish line and running the entire length of the track oval.

V. Long/Triple Jump

1. Runway lines

- a) 2" wide lines
 - b) White in color
 - c) 48" wide runways (inside edge to inside edge of line).
2. Distance marks
- a) Contractor to confirm distance mark configuration prior to construction.
 - b) Provide 1.5" long by 1" wide white lines outside the runway on the right hand (direction of running) side every foot beginning at 20 feet from the long jump foul line and extending the length of the runway or 150' whichever is shorter.
 - c) For the lines in item 4, every 5 and 10 foot line to be 3" long by 1" wide.
 - d) For the lines in item 4, every 10 foot line to be labeled below the line facing the athlete.
3. Polyurethane plugs for take off boards
- a) 4" nearest the sand pit to be black.
 - b) Remaining 8" to be white.
4. Painted take off locations
- a) Per NFHS requirements for both boys and girls locations

W. Pole Vault

1. Runway lines
 - a) 2" wide lines
 - b) 48" wide runways (inside edge to inside edge of line)
 - c) White in color
2. Zero Line
 - a) Provide 1/2" wide white line at back of each box extending 15' in each direction
3. Distance Marks
 - a) Contractor to confirm distance mark configuration prior to construction.
 - b) Provide 1.5" long by 1" wide white lines outside the runway on the right hand side(direction of running) every foot beginning at 15 feet from the plant box and extending the length of the runway or 150' whichever is shorter.
 - c) Every 5 and 10 foot line to be 3" long by 1" wide.
 - d) Every 10 foot line to be labeled below the line facing the athlete.

X. Lane numbers

1. The numbers are a script style or block style, 24" wide by 24" high, and the numbers will not have a color shadow.
2. The color of the numbers will be white. The contractor is to confirm lane number locations prior to construction.
 - a) There are 5 sets of numbers: There are 2 sets of numbers 5 feet before the 110M starting line and outside the track oval lane lines.
 - b) There is 1 set of numbers 1 foot after the common finish line, facing to the outside of the track oval.
 - c) There is 1 set of numbers staggered in the first turn, above the 400M staggers.

- d) There is 1 set of numbers staggered at the 200M, above the starting line.
- e) Lane numbers are 0-9. The lane inside the temporary track is number 0.
- f) All line markings must be reviewed and verified with the Owner's representative prior to installation.

END OF SECTION