*Specifier Note: This Specification has been created to assist in preparing a Project or Master Specification. In accordance with Construction Specifications Institute (CSI)'s MasterFormat®, this Specification can be used with most master specifications following simple editing.*

*Specifier Note: **The enclosed requirements are intended for outdoor installations over asphalt.** If the provisions described herein are adopted for installations indoors or over another type of base, Mondo's Warranty will be null and void and the Specifier will be held liable. Specifications for indoor applications or outdoor applications over concrete may be obtained from the Technical Department at Mondo America, Inc.*

*Specifier Note: This Specification describes the Synthetic Running Track Surfacing to be installed. The number and title of the section may be changed, if the Specifier deems necessary, but in any circumstance it will belong to the general CSI Section 32 18 00: Athletic and Recreational Surfacing.*

---

**SECTION 32 18 23.39**
**SYNTHETIC RUNNING TRACK SURFACING**

## PART 1 GENERAL

### 1.01 SUMMARY

1. This section covers all labor and materials required to install prefabricated Synthetic Running Track Surfacing.
2. Full knowledge and understanding of all drawings, specifications, general provisions of the bidding documents and related foundation and utilities work is required of the Surfacing Contractor (SC).
3. The General Contractor (GC) is responsible for the installation, if any, of the track subbase works, drainage systems and asphalt base works, designed by others, to corrected levels, per any specified Association's requirements, and as is detailed in the project drawings and Master Specifications.
4. The GC is responsible for the purchase and installation, or reinstallation, of any inground sports equipment, as is required.
5. The GC is responsible for ensuring the subbase, base and/or existing surface to receive the Synthetic Running Track Surfacing, as well as all inground sports equipment, meet the specifications of the various manufacturers, the specified Association's requirements and the rules of the sport.
6. The SC is responsible for the purchase and installation of Synthetic Running Track Surfacing, as is detailed in the Project Drawings and Master Specifications.
7. If line marking is specified, the SC is responsible for all line markings, as is detailed in the Project Drawings and Master Specifications, and per specified Association's requirements for track and field events.

A. Products Supplied and Installed by SC:

1. Prefabricated Synthetic Running Track Surfacing.
2. Accessories required for installation, line marking (if specified), maintenance and repair.

B. Related Requirements:

*Specifier Note: These divisions and sections serve as a guide to what is essential information needed to determine the acceptability of the site conditions required for the installation of Synthetic Running Track Surfacing. The Specifier may choose to include other sections he/she deems necessary.*

1. Division 02 00 00 – Existing Conditions
2. Section 11 68 33.43 – Track and Field Equipment
3. Division 31 00 00 – Earthwork
4. Division 32 00 00 – Exterior Improvements
5. Section 32 10 00 – Bases, Ballasts, and Paving

6. Section 32 12 16.36 – Athletic Asphalt Paving
7. Division 33 00 00 – Utilities

**1.02 REFERENCES**

A. Association(s):

*Specifier Note: When applicable, specify desired Association(s) for required level of competition. The Specifier may choose to include other Associations he/she deems necessary.*

1. International Association of Athletics Federations (IAAF).
2. National Collegiate Athletic Association (NCAA).
3. National Federation of State High School Association (NFHS).

B. ASTM International (ASTM):

1. ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
2. ASTM D2240: Standard Test Method for Rubber Property (Durometer Hardness).
3. ASTM D3389: Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader).
4. ASTM F387: Standard Test Method for Measuring Thickness of Resilient Floor Covering With Foam Layer.
5. ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring.
6. ASTM F1514: Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change.
7. ASTM F1515: Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change.

C. European Committee for Standardization (CEN):

1. EN 13036-4: Road and airfield surface characteristics. Test methods - Part 4: Method for measurement of slip/skid resistance of a surface: The pendulum test.
2. EN 14808: Surfaces for sports areas. Determination of shock absorption.
3. EN 14809: Surfaces for sports areas. Determination of vertical deformation.
4. EN 14810: Surfaces for sports areas. Determination of spike resistance.

D. International Organization for Standardization (ISO):

1. ISO 9001: Quality Management Systems - Requirements.

**1.03 SUBMITTALS**

*Specifier Note: The following are typical submittals. The Specifier may choose to include other submittals he/she deems necessary.*

A. Action Submittals:

1. SC to provide current printed data sheets for all Products Supplied.
2. If applicable, SC to provide documentation that shows the specified and installed Manufactured Product meets the IAAF Performance Specification for Synthetic Surfaced Athletic Tracks (Outdoors) and is certified per the IAAF certification system of March 2011. The same components from the test sample must be used in the installed surface. No substitutions may be allowed.
3. Provide three (3) samples, 6” x 6”, for verification of such characteristics as color, texture and finish for each Manufactured Product. Separate samples are required for each color that will be installed. Samples must be representative of Manufactured Product specified, and must be submitted and approved by the Architect prior to bidding. During installation, samples will be used for quality comparison with the installed product.

4. SC shall submit a signed letter that the Manufactured Product has no measurable traces of heavy metals, leachable mercury or any other hazardous materials identified by the EPA. Prior to installation, SC shall provide an 8" x 10" sample of the Manufactured Product, for any spot tests conducted by the Owner's independent laboratory during installation to verify and/or compare results with the submittals and to establish parameters.
5. If line marking is specified, provide samples of available paint colors for selection and approval.
6. Provide written requirements for the base, the installation of the Manufactured Product, the painting of the Manufactured Product (when specified), respecting any Association requirements for the sport and desired level of competition. Indicate any adverse conditions that may limit the installation or affect its quality, such as limiting temperature/climatic conditions.
7. SC to provide a list of at least ten (10) completed Track and Field facilities that have been properly certified to meet specified Association's requirements, utilizing the same or similar Synthetic Running Track Surfacing as specified.
8. SC to provide a copy of the ISO 9001 certification from the Manufacturer's plant where the Synthetic Running Track Surfacing was produced.
9. As necessary, provide shop drawings prepared for project illustrating layouts, details, dimensions and other data.

B. Informational Submittals:

*Specifier Note: When applicable, indicate to Surfacing Contractor (SC) if line marking must meet Association requirements and provide current copy of guidelines for application with the Informational Submittals.*

1. SC to provide Owner a copy of the Manufacturer's current printed standard warranty for the Manufactured Product.
2. SC to provide Owner a copy of Manufacturer's current printed outdoor asphalt base surface preparation guidelines.
3. SC to provide Owner a copy of Manufacturer's current printed installation guidelines for all Products Supplied, including line marking when specified.

C. Closeout Submittals:

1. If line marking has been specified, the SC shall submit to the Owner a certification of accuracy submitted by a registered Engineer or Surveyor upon completion of all line markings. The Engineer or Surveyor shall certify the actual line markings on the facility, not the line markers drawings or computations. The document shall state that the line markings and layout meets the specified Association requirements for desired level of competition, and the requirements of the drawings and Master Specification.
2. SC to provide Owner a copy of the registered standard warranty certificate for Synthetic Running Track Surfacing.
3. SC to provide Owner a copy of the Manufacturer's current printed maintenance guidelines for Synthetic Running Track Surfacing.
4. SC to provide Owner a copy of the Manufacturer's current printed bulletin on Spike Recommendations for Super X and Mondotrack (Bulletin 11-001).

D. Maintenance Materials Submittals:

1. Provide extra stock materials from original dye lots, for use in facility operations and maintenance (approximately 2% of the total floor surface for each color, surface texture and format of Manufactured Product).

**1.04 QUALITY ASSURANCE**

A. SC, Installer and Line Marker Qualifications:

1. SC shall be fully acquainted with the existing facility and utilities and shall fully understand the difficulties and restrictions attending the execution of the work under contract. SC to advise the Owner of any restrictions or anticipated difficulty, before submitting bids.
2. SC to have completed at least ten (10) Track and Field facilities that have been properly certified to meet specified Association requirements for desired level of competition.
3. SC must be recognized and approved by the Manufacturer.
4. Installer must be approved by SC and must have performed same scale installations in the last three (3) years.
5. SC is required to use approved technicians for the installation. Local laborers may be hired for non-technical work only.
6. SC must ensure that a designated Project Manager/Superintendent be on site every day to supervise the installation of the Synthetic Running Track Surfacing. Substitutions of Project Manager/Superintendent shall not be permitted.
7. If line marking is specified, the Line Marker shall be approved by the SC. Painting must be done by professionals with proper experience and qualifications to effectively perform the work; all line markings shall be spray applied under the direction of the qualified Line Marker, having painted a minimum of twenty (20) track and field facilities that meet Association rules and requirements, as specified.
8. Installation of a mock-up is highly recommended and must be deemed acceptable by Owner and Architect. Mock-up is to be installed following the same procedures and utilizing the same specified materials that will be used for the actual project. Mock-up dimensions as instructed by Owner or Architect.
9. All machinery and materials used must be only those approved by the Owner and Manufacturer.

B. Manufacturer Qualifications:

1. Manufacturer must be certified ISO 9001.
2. Manufacturer must have a minimum of fifteen (15) years of experience in the manufacturing of prefabricated Synthetic Running Track Surfacing.
3. Manufacturer must have successfully completed a minimum of ten (10) facilities, with the specified product, that has been approved to meet all requirements of the specified Association, as appropriate, in the United States and/or Canada.
4. Manufactured Product must have undergone a vulcanization process; factory lamination will not be accepted as equivalent.

C. Slopes & Tolerances:

*Specifier Note: When applicable, specify desired Association requirements.*

1. The maximum lateral inclination permitted for the track across the full width of the track, outermost lane down to Lane 1, and across all runways, shall not exceed 1:100 (1.0%) for IAAF and NCAA installations and 1:50 (2%) for NFHS installations. In any case the minimum lateral inclination shall be no less than 0.6%.
2. The maximum overall downward inclination permitted in the running direction for the track, the running direction for all runways and the throwing direction for all landing sectors, measured over the full length of any straight track distance, the last 40 meters of runways and the full length of landing sectors, shall not exceed 1:1000 (0.1%).
3. High Jump – Maximum inclination of the last 15 m of the approach and take-off area shall not exceed 1:250 in the running direction toward the center of the crossbar.
4. Depressions cannot exceed 3 mm under a 1 m straight edge or 6 mm under a 4 m straight edge.
5. These requirements are assumed to reflect the status quo of the existing track configuration; should any areas proves to be noncompliant, remedial works will be subject to repair by the GC or other, this work is not the responsibility of the SC.

6. At the completion of the construction of the track and field base, the GC shall supply to the SC a topographic survey confirming that the elevations/slopes of the base meet the rules/requirements of the sport and/or the specifications and to show that the track and field areas will meet the rules of the sport. The GC will provide adequate test results verifying that the installed asphalt is to required specification. The asphalt testing and topographic survey is for the account of the GC.

**1.05 DELIVERY, STORAGE AND HANDLING**

A. Products Supplied must be delivered in Manufacturer's original, unopened and undamaged packaging with identification labels intact.

B. Products Supplied must be protected from exposure to harmful weather conditions and must be safely stored on a clean, dry, flat surface. Store rolls of Synthetic Running Track Surfacing upright.

C. Climate controlled storage is recommended. Storage temperature must not be below 40°F (4°C) and must not exceed 100°F (38°C).

D. Avoid storing Manufactured Product for extended periods of time or additional material trimming may be required.

E. Products Supplied need not suffer damage during handling (i.e. dents/scratches, edge chipping, excessive warping, etc.).

**1.06 SITE CONDITIONS**

A. The GC shall be responsible for ensuring required drainage and base works. The GC will provide a technician on-site during sub-contract installations through the completion of the contract. The surfacing areas must drain properly and be free of bumps and/or depressions.

B. The GC or Construction Manager shall be responsible for ensuring all site conditions meet the requirements of the Manufacturer, as referenced herein at sections 3.02 and 3.03.

C. The SC will provide a technician who will review the asphalt specification, as supplied by the GC, making sure the specification is acceptable and verifying the suitability of the HMAC (hot mix asphalt concrete) after installation.

D. Any concrete works are the responsibility of the GC. If Manufactured Product will be glued to concrete in designated areas, then GC must verify with the Manufacturer all requirements for curing compound/agents, and any special moisture tests or treatments necessary.

E. Installation of the Products Supplied shall not take place until the completion of adjacent or concurrent construction operations which generate dust, airborne abrasives, or any other by-product that, in the opinion of the Owner or Manufacturer, would be harmful to the Manufactured Product.

F. GC is responsible for maintaining a secure and clean working area before, during and after the installation of the Synthetic Running Track Surfacing.

**1.08 WARRANTY**

A. The synthetic running track surfacing is warranted to be free from manufacturing defects for a period of one (1) year from the date of shipment from the Manufacturer.

B. The synthetic running track surfacing is warranted against excessive wear under normal usage for a period of ten (10) years from the date of shipment from the Manufacturer.

C. Refer to current copy of Manufactured Product's Limited Warranty for all terms and conditions.

**PART 2 PRODUCTS**

**2.01 MANUFACTURED PRODUCTS**

A. Manufacturer:

1. Mondo S.p.A., Piazzale E. Stroppiana, 1, 12051 Alba, Fraz. Gallo – Italia.

B. Description:

*Specifier Note: Specify color(s) and width(s) required. Manufactured Product width and length to minimize joints in all areas: use lane-width material for all lanes, side joints to be located under line markings, ensuring a minimum of head joints; use full-width material with no side joints in runways, and maximum width material in the D-zones to reduce the amount of joints in those areas.*

1. Mondotrack WS is prefabricated synthetic rubber running track surfacing with a honeycomb (elongated hexagon-shaped) design and engineered shock absorption layer for superior biomechanical properties and athlete comfort, calendered and vulcanized with a particular closed cell structure, based on special isoprenic rubbers, mineral fillers, stabilizing agents and pigmentation, with a system of differential elasticity between top surface and base, as manufactured by Mondo S.p.A. or approved equal. Mondotrack WS features an innovative internal skeleton, housed in the surface layer, consisting of a three-dimensional network of deformable elements with controlled composition and elasticity. The tessellation is substantially reduced in size, and the grooves between adjacent texture components are shallower and wider.
2. Manufactured in two layers which are vulcanized together. The shore hardness of the top layer will be greater than that of the bottom layer; shore hardness of layers to be recommended by the Manufacturer and the limits specified.
3. Thickness: 0.531 in. (13.5 mm).
4. Colors: Provided in standard, solid background colors. Consult available colors for outdoor applications.
5. Surface Texture: Matte Mondotrack WS embossing. Non-directional, irregular tessellation patterns with interconnected surface channels. Directional patterns shall be deemed unacceptable.
6. Format: Sheets available in widths from 3' (0.92 m) to 6' (1.83 m) and 49'2" (15 m) long [min. 32'9" (10 m)/max. 49'2" (15 m)].

C. Performance:

*Specifier Note: Results may vary slightly between production runs, due to manufacturing tolerances and testing methods/equipment used by laboratories during analysis. However, Manufactured Product must always meet the minimum requirements listed.*

1. When applicable, refer to Association performance requirements for desired level of competition.
2. Performance of Manufactured Product to conform to the following criteria:

| Performance Criteria | Test Methods | Requirements | Results* |
|---|---|---|---|
| Elongation at Break | ASTM D412 | ≥100% | ≥203% |
| Tensile Strength | ASTM D412 | ≥75 psi | ≥132 psi |
| Hardness of wear layer (Shore A durometer) | ASTM D2240 | 55 ±5 | 58 |
| Hardness of backing (Shore A durometer) | ASTM D2240 | 40 ±5 | 40 |

| Performance Criteria | Test Methods | Requirements | Results* |
|---|---|---|---|
| Abrasion Resistance (H18 wheel, 1000g, 1000 cycles) | ASTM D3389 | ≤2.0 g | ≤1.2 g |
| Thickness | ASTM F387 | 13.5 mm (±0.3 mm) | 13.5 mm (±0.3 mm) |
| Resistance to Chemicals | ASTM F925 | ≤ Slight Change | Compliant |
| Heat Stability | ASTM F1514 | ≤8.0 ΔE | Compliant |
| Light Stability | ASTM F1515 | ≤8.0 ΔE | Compliant |
| Slip/Skid Resistance (Dry) | EN 13036-4 | ≥80 | ≥80 |
| Slip/Skid Resistance (Wet) | EN 13036-4 (IAAF) | ≥47 | ≥55 |
| Shock Absorption | EN 14808 (IAAF) | 35-50% | ≥38% |
| Vertical Deformation | EN 14809 (IAAF) | 0.6-2.5 mm | 1.6 mm (±0.3 mm) |
| Spike Resistance | EN 14810 | ≤20 ΔTr% | ≤20 ΔTr% |
| Spike Resistance | EN 14810 | ≤20 ΔEb% | ≤20 ΔEb% |

*Results obtained from manufacturing controls can vary between production lots and do not constitute representations or warranties as to any particular production lot. Mondo reserves the right to modify product design and/or specifications at any time without notice.

D. Limitations:

1. Athletic footwear with spikes is permitted onto Mondotrack WS, provided that use and spike specifications always respect Manufacturer's most current guidelines, as outlined in the bulletin Spike Recommendations for Super X and Mondotrack (Bulletin 11-001).

E. Materials:

1. Provide Mondotrack WS, as manufactured by Mondo S.p.A. or approved equal.
2. Provide Synthetic Running Track Surfacing, as specified in section 2.01 B. Description.

**2.02 ACCESSORIES**

*Specifier Note: Accessories should be specified in accordance with the project requirements.*

1. Provide adhesive certified by Manufacturer: Mondo PU 100 polyurethane adhesive (color-coordinated adhesive available for seaming). For suitability, recommendations and use, please refer to Manufacturer's current printed adhesive guidelines.
2. Portland cement based patching or levelling compound to be supplied or recommended/approved by Manufacturer.
3. If line markings are specified, all painting products are to be supplied or recommended/approved by Manufacturer.

**PART 3 EXECUTION**

**3.01 INSTALLERS**

A. Refer to section 1.04 of this document for information on installers.

**3.02 EXAMINATION**

A. SC to review bidding documents and specifications, verify suitability of installation by GC's sub-contractors, the asphalt base and any in-ground equipment.

B. Prior to installation, SC to verify that the surfacing areas drain properly and are free of bumps and/or depressions.

C. Prior to installation, SC to obtain confirmation that the asphalt and/or concrete have been installed per specification. If applicable, confirm concrete surfaces are free from bond inhibitors and confirm acceptable moisture levels, prior to gluing down the Synthetic Running Track Surfacing.

D. GC to confirm completion of adjacent or concurrent construction operations, prior to installation of Synthetic Running Track Surfacing.

E. GC is responsible for maintaining a secure and clean working area before, during and after the installation of the Synthetic Running Track Surfacing.

**3.03 PREPARATION**

*Specifier Note: The outdoor asphalt base is to be prepared according to Manufacturer's current printed guidelines; it is recommended that the Specifier review said guidelines. A copy of the outdoor asphalt base surface preparation guidelines can be obtained from the Technical Department at Mondo America, Inc. The guidelines are considered common practice for the preparation and verification of asphalt base surfaces that will receive Synthetic Running Track Surfacing, and as such should not be omitted or altered in any case.*

A. General Contractor (GC):

1. GC is responsible for the installation, if any, of the track subbase works, drainage systems and asphalt base works, designed by others, to corrected levels, per specified Association's requirements, and as is detailed in the project drawings and specifications.
2. Prepare asphalt base surface in accordance with Manufacturer's current printed guidelines.

B. Surfacing Contractor (SC):

1. SC is required to have a Technical Representative verify the suitability of the installed asphalt base, prior to the installation of the Synthetic Running Track Surfacing.

**3.04 INSTALATION**

*Specifier Note: Products Supplied are to be installed following their current printed guidelines; it is recommended that the Specifier review said guidelines. Copies of all installation guidelines for Products Supplied can be obtained from the Technical Department at Mondo America, Inc. Installation procedures may be altered to accommodate special project needs, as deemed necessary by the Specifier and after he/she has consulted the Technical Department at Mondo America, Inc. to ensure suitability. When applicable, respect specified Association current rules and regulations for desired level of competition.*

A. Weather and Climate:

1. If in the opinion of the SC, Manufacturer or Owner, weather and climatic conditions are having or will have an adverse effect on the installation; work shall be delayed until the adverse condition has passed.

B. General Contractor (GC):

1. If any, GC is to purchase and install or adjust all existing fixtures and structures, and all existing inground track and field equipment. Refer to CSI Section 11 68 33.43 – Track and Field Equipment. It shall be the GC's responsibility to see that each item is supplied and installed and/or adjusted as per the Manufacturer's specifications, respecting specified Association's rules when applicable. The items where Synthetic Running Track Surfacing must be installed up to or on top of must be installed prior to the installation of the Synthetic Running Track Surfacing. Pole-vault box covers, pit covers and take-off boards shall receive Synthetic Running Track Surfacing.

C. Surfacing Contractor (SC):

1. SC to sufficiently clean down all areas to be surfaced and protect all areas not to receive Synthetic Running Track Surfacing.
2. SC to install rolls of Synthetic Running Track Surfacing following Manufacturer's current printed guidelines and respecting the requirements of the Master Specification.
3. SC to install all removable Synthetic Running Track Surfacing, as covers in all throwing circles within synthetic aprons, on pole vault box covers, on long/triple jump blanking boards and, if included, apply surfacing to the sand pit covers and the steeplechase water jump pit cover.
4. SC to install all Accessories following Manufacturer's current printed guidelines.
5. SC must provide a technical representative on-site for any technical services during the installation of the Synthetic Running Track Surfacing.

D. Line Marker (If Painting Is Specified):

1. Line Marker to paint all line markings following Manufacturer's current printed painting procedure.
2. All line markings shall be spray applied.
3. Line Marker to paint all line markings following specified Association's current requirements for track and field events, drawings and the Master Specification.
4. When applicable, follow specified Association's current guidelines; stripe all lane lines, start-finish lines, event markings, 5 sets of lane numbers (one color) and runway borders according to the standards per the listings hereafter:

**400m Track Markings (IAAF)** *(Always refer to current copy of IAAF for latest information)*

**1. Official IAAF Events:**

| | | |
|---|---|---|
| a) | 100 m | On home straight or both straights [as requested] |
| b) | 100 m hurdles | On home straight or both straights [as requested] |
| c) | 110 m hurdles | On home straight or both straights [as requested] |
| d) | 200 m | All in lanes, one turn |
| e) | 400 m | All in lanes |
| f) | 400 m hurdles | All in lanes |
| g) | 800 m | Waterfall start and 1-turn stagger |
| h) | 1000 m | Waterfall start/group start or 1 turn stagger |
| i) | 1500 m | Waterfall start |
| j) | 1 mile run | Waterfall start |
| k) | 2000 m | Waterfall start/group start |
| l) | 2000 m steeplechase | Waterfall start |
| m) | 3000 m | Waterfall start/group start |
| n) | 3000 m steeplechase | Waterfall start |
| o) | 5000 m | Waterfall start/group start |
| p) | 10 000 m | Waterfall start/group start |
| q) | 400 m relay (4 x 100 m) | All in lanes |
| r) | 1600 m relay (4 x 400 m) | 3 turn stagger |
| s) | Shot Put, discus and hammer events | Paint dividing lines |
| t) | Shot Put, discus, hammer and javelin | Paint sector lines where on synthetic (not in circle or on runway) |
| u) | Javelin | Paint foul line, beginning of sector lines, radius point. |
| v) | Pole vault, long jump, triple jump and javelin | Paint runway lines |
| w) | Common finish line | Paint to current IAAF Official [Rules] Handbook, a solid |

| | | |
|---|---|---|
| | | white line 50 cm wide with black at lane line intersections |
| x) | Lane numbers camera/device | Paint prior to common finish line, facing timing |
| | | per current IAAF Track and Field Facilities Manual |
| y) | Common finish line – lean lines | Paint lean line in lanes at 1 meter before the finish line |
| z) | Group starts – distance events | Paint 5 x 5cm mark on the line between lanes 4 & 5 (lanes 3 & 4 on a 6 lane track) at the entrance to the main and back straights |

**2. Other Events:** (*These events to be verified with Owner prior to installation*)

| | | |
|---|---|---|
| a) | 300 m hurdles | |
| b) | 1600 m | Waterfall start |
| c) | 3200 m | Waterfall start |
| d) | 2000 m steeplechase | Waterfall start |
| e) | 2 mile run | Waterfall start |
| f) | 800 m relay (4 x 200 m) | All in lanes |
| g) | Sprint medley relay (200, 200, 400, 800 m) | 2 turn stagger |
| h) | Distance medley relay (1200, 400, 800, 1600 m) | |
| i) | 3200 m relay (4 x 800 m) | |
| j) | 6000 m relay (4 x 1500 m) | |

**3. IAAF Line Marking Colors** (*per Marking Plan insert in current IAAF Track and Field Facilities Manual*)

a) Starting line (white): 100 m, 100 mh, 110 mh, 200 m, 400 m, 400 mh, 4 x 100 m relay, 1000 m, 1500 m, 2000 m, 1 mile, 3000 m, 2000 m Steeplechase, 3000 m Steeplechase, 5000 m, 10000 m
b) Starting line (white and green): 800 m
c) Starting line (white and blue): 4 x 400 m relay
d) Finish line (white): all
e) Relay exchange zones: 4 x 100 m (yellow), 4 x 400 m (blue)
f) Hurdle locations: 100 m (yellow), 110 m (blue), 400 m (green), 2000 m steeplechase and 3000 m steeplechase (blue crosses)

Break line: (green)

**<u>400 m Track Markings (NCAA)</u>** *(Always refer to current copy of NCAA for latest information)*

**1. Official NCAA Events:**

| | | |
|---|---|---|
| a) | 100 m | On direction on home straight |
| b) | 100 m hurdles | On direction on home straight |
| c) | 110 m hurdles | On direction on home straight |
| d) | 200 m | All in lanes, one turn |
| e) | 400 m | All in lanes |
| f) | 400 m hurdles | All in lanes |
| g) | 800 m | Waterfall start and 1-turn stagger |
| h) | 1500 m | Waterfall start |
| i) | 3000 m | Waterfall start |
| j) | 3000 m steeplechase | Waterfall start |
| k) | 5000 m | Waterfall start |
| l) | 10 000 m | Waterfall start |
| m) | 400 m relay (4 x 100 m) | All in lanes |
| n) | 1600 m relay (4 x 400 m) | All in lanes (3 turn stagger) |
| o) | Shot put, discus and hammer events | Paint dividing lines |
| p) | Shot put, discus, hammer and javelin | Paint sector lines (not circle or on runway) |
| q) | Javelin | Paint foul line, beginning of sector lines, radius point |
| r) | Pole vault, long jump, triple jump and javelin | Paint runway lines |

| | | |
|---|---|---|
| s) | Common finish line | Paint to current NCAA rule book with intersections of lane lines and finish line painted black |
| t) | Lane numbers | Paint beyond the common finish line, facing timing camera/device |
| u) | International zones | As per current NCAA rule book |
| v) | Break lines for distance events | At entry of back and main straights |
| w) | Group starts for distance events | Waterfall start lane 5 through 8 (lane 4 through 6 on 6 lane) |
| x) | Assembly line for water fall starts | Three meters before water fall start |

**2. Other College Events:** (*These events to be verified with Owner prior to installation*)

| | | |
|---|---|---|
| a) | 800 m relay (4 x 200 m) | All in lanes |
| b) | Sprint medley relay (200, 200, 400, 800 m) | 3 turn stagger |
| c) | Distance medley relay (1200, 400, 800, 1600 m) | |
| d) | 3200 m relay (4 x 800 m) | |
| e) | 6000 m relay (4 x 1500 m) | |
| f) | 1 mile run | Waterfall start |

**3. NCAA Line Marking Colors** (*per current NCAA Rule Book*)

a) Starting line (white): 100 m, 100 mh, 110 mh, 200 m, 400 m, 1500 m, 3000 m, 3000 m steeplechase, 5000 m, 10000 m
b) Starting line (white with green insert): 800 m, one-turn stagger
c) Starting line (white with red insert): 800 m relay, four-turn stagger
d) Starting line (white with blue insert): 1600 m relay, three-turn stagger
e) Finish line (white): all
f) Relay exchange zones: 400 m relay (yellow), 800 m relay (red), 1600 m relay (blue)
g) Hurdle locations: 100 m (yellow), 110m (blue), 400 m (green), 3000 m steeplechase (black)
h) Break line: (green)

**<u>400m Track Markings (NFHS)</u>** *(Always refer to current copy of NFHS for latest information)*

**1. Official NFHS Events:**

| | | |
|---|---|---|
| a) | 100 m | On direction on home straight |
| b) | 100 m hurdles | On direction on home straight |
| c) | 110 m hurdles | On direction on home straight |
| d) | 200 m | All in lanes, one turn |
| e) | 400 m | All in lanes |
| f) | 300 m hurdles | All in lanes |
| g) | 800 m | Waterfall start and 1-turn stagger |
| h) | 1600 m | Waterfall start |
| i) | 3200 m | Waterfall start |
| j) | 400 m relay (4 x 100 m) | All in lanes |
| k) | 800 m relay (4 x 200 m) | All in lanes |
| l) | 1600 m relay (4 x 400 m) | Three-turn stagger |
| m) | 3200 m relay (4 x 800 m) | Waterfall start |
| n) | Shot put, discus and hammer events | Paint dividing lines on Mondo surface only |
| o) | Shot put, discus, hammer and javelin | Paint sector lines on Mondo surface only (not in circle or on runway) |
| p) | Javelin | Paint throw are foul line, beginning of sector lines, radius point all on Mondo surface only |
| q) | Pole vault, long jump, triple jump and javelin | Paint runway lines on Mondo surface only |
| r) | Common finish line | Paint solid white line 5cm wide |
| s) | Lane numbers | Paint prior to common finish line, facing timing camera |
| t) | Relay exchange zones | As per current NFHS rule book |

| | | |
|---|---|---|
| u) | Break lines | At entry of back and main straights |
| v) | Group starts for distance events | Waterfall start lane 5 through 8 |

**2. Other Events and Markings:** (*These events to be verified with Owner prior to installation*)

| | | |
|---|---|---|
| a) | 1 mile run | Waterfall start |
| b) | 400 m hurdle | All in lanes |
| c) | 1500 or 2000 m steeplechase | Waterfall start |
| d) | 1500 m | Waterfall start |
| e) | 3000 m | Waterfall start |
| f) | 5000 m | Waterfall start |

**3. Paint**

a) All lane lines, start and finish lines to receive 2 coats, of standard colors per current NFHS rule book
b) Single color numbers are to be 30 inches high for 42-inch lanes; five (5) sets of numbers are required, location to be verified by Owner prior to installation.
c) Paint event labels at all start lines.

**4. NFHS Line Marking Colors**

a) Starting line (white): 100 m, 100 mh, 110 mh, 200 m, 300 m, 400 m, 1600 m/3200 m
b) Starting line (green): 800 m
c) Starting line (red): 4 x 200 m relay
d) Starting line (blue): 4 x 400 m relay
e) Finish line (white): all
f) Relay exchange zones: 400 m relay (yellow), 800 m relay (red), 1600 m relay (blue), 3200 m relay (green)
g) Hurdle locations: 100 m (yellow), 110 m (blue), 300 m (red)
h) Break line: (green)

## 3.04 CLEANING

A. It is highly recommended to wait at least 6 months before performing the initial wash of the outdoor Synthetic Running Track Surfacing. This allows the natural paraffins to migrate to the surface of the product. In any case, the initial wash should not occur before a minimum of 72 hours after the material has been fully installed, and a minimum of 30 days when the surface has received newly painted lines so that the paint has time to properly cure.
B. Always maintain the Synthetic Running Track Surfacing following Manufacturer's current printed guidelines.

## 3.05 PROTECTION

A. As needed, protect Synthetic Running Track Surfacing with 1/8" Masonite during and after the installation, prior to acceptance by the Owner.

**END OF SECTION**