

***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 concrete. If the provisions described herein are adopted for installations over asphalt, or for indoor installations, Mondo's Warranty will be null and void and the Specifier will be held liable. Specifications for indoor applications or outdoor applications over asphalt 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 concrete base works, designed by others, to corrected levels, 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 equipment, as 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 equipment, meet the specifications of the various manufacturers.
6. The GC is responsible for delivering a concrete base that has received a topical moisture mitigation treatment, applied by approved professionals, prior to the installation of the Synthetic Running Track Surfacing.
7. The SC is responsible for the purchase and installation of Synthetic Running Track Surfacing, as is detailed in the Project Drawings and Master Specifications.
8. If line marking is specified, the SC is responsible for all line markings, as is detailed in the Project Drawings and Master Specifications.

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 03 05 00 – Common Work Results for Concrete
3. Section 07 05 00 – Common Work Results for Thermal and Moisture Protection
4. Section 07 10 00 – Dampproofing and Waterproofing
5. Division 11 00 00 – Equipment
6. Division 31 00 00 – Earthwork

7. Division 32 00 00 – Exterior Improvements
8. Section 32 10 00 – Bases, Ballasts, and Paving
9. Division 33 00 00 – Utilities

1.02 REFERENCES

A. 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 D4944: Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester.
4. ASTM E1643: Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
5. ASTM E1745: Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
6. ASTM F387: Standard Test Method for Measuring Thickness of Resilient Floor Covering With Foam Layer.
7. ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
8. ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring.
9. ASTM F1514: Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change.
10. ASTM F1515: Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change.

B. 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.

C. 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. 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.
3. 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.
4. If line marking is specified, provide samples of available paint colors for selection and approval.
5. Provide written requirements for the base, the installation of the Manufactured Product, and the painting of the Manufactured Product (when specified). Indicate any adverse conditions that may limit the installation or affect its quality, such as limiting temperature/climatic conditions.
6. SC to provide a list of at least ten (10) completed facilities with Synthetic Running Track Surfacing, utilizing the same or similar surfacing product as specified.

7. SC to provide a copy of the ISO 9001 certification from the Manufacturer's plant where the Synthetic Running Track Surfacing was produced.
8. As necessary, provide all shop drawings prepared for project illustrating layouts, details, dimensions and other data.

B. 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 concrete 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. SC to provide Owner with a copy of the registered standard warranty certificate for Synthetic Running Track Surfacing.
2. SC to provide Owner with a copy of the Manufacturer's current printed maintenance guidelines for Synthetic Running Track Surfacing.

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 successfully installed at least ten (10) facilities, utilizing the same or similar prefabricated Synthetic Running Track Surfacing product as specified.
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 everyday 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) facilities, and utilizing the same or similar prefabricated Synthetic Running Track Surfacing product 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. Manufactured Product must have undergone a vulcanization process; factory lamination will not be accepted as equivalent.

C. Slopes & Tolerances:

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 1:50 (2%). 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 shall not exceed 1:1000 (0.1%).
3. Depressions cannot exceed 3 mm under a 1 m straight edge or 6 mm under a 4 m straight edge.
4. 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.

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. Concrete works are the responsibility of the GC. 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. Concrete slabs, on or below grade, must be installed over a permanent effective vapor retarder, respecting current versions of the standard practice ASTM E1643 and the standard specification ASTM E1745. The vapor retarder must be placed directly underneath the concrete slab, above the granular fill, as per Manufacturer's instructions. The vapor retarder must have a perm rating of 0.1 or less and must have a minimum thickness of 10 mil (0.010 in).
- D. No sealers or curing compounds are applied to or mixed into the concrete (refer to Section 03 05 00 – Common Work Results for Concrete of Division 3).

- E. Installation of the Synthetic Running Track Surfacing to be carried out no sooner than the specified curing time of the concrete (normal density concrete curing time is approximately 28 days for development of design strength, having a minimum 3500 psi in compressive strength). Refer to current version of ASTM F710 for additional information.
- F. Concrete surface must be free of all contaminants that can inhibit bond (paint, wax, dust, oil or grease, sealer, curing compound, solvent, asphalt, old adhesive residues, etc.). All contaminants must be removed from the surface via mechanical abatement. Use of abatement chemicals is not recommended.
- G. Concrete must have a smooth finish, proper density and be highly compacted with a tolerance of 1/8th of an inch in a 10 foot radius (3.2 mm in 3.05 m radius). Floor Flatness (FF) and Floor Levelness (FL) numbers are not recognized. Differences in elevation across an expansion joint shall not exceed 1/32 inch.
- H. Application of a topical moisture reduction barrier is required, in order to protect from moisture vapor emissions and moisture infiltration from natural and/or artificial causes. The only acceptable and proven compatible topical moisture reduction barrier is Aquafin Vaportight Coat SG2, applied at a rate of 160 square feet per 2.1 gal. kit. Install according to the manufacturer's instructions.
- I. Moisture vapor emission content of the concrete slab and surface pH must not exceed the tolerance of the adhesive used, when tested according to ASTM D4944 (Calcium Carbide Gas Pressure Tester). Maximum moisture content of concrete, using this specified method, must not exceed 2.5%. The concrete's surface pH should be between 7 and 10.
- J. 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.

- 1. Super X Performance is prefabricated synthetic rubber running track surfacing, calendared and vulcanized with a particular closed cell structure, based on special isoprenic rubbers, mineral fillers, stabilizing agents and pigmentation, highly resistant to UV rays and atmospheric agents, with system of differential elasticity between top surface and base, as manufactured by Mondo S.p.A. or approved equal.

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: 0.315 in. (8 mm).
4. Colors: Provided in standard, solid background colors. Consult available colors for outdoor applications.
5. Surface Texture: Matte Super X Performance embossing. Non-directional, irregular tessellation patterns with interconnected surface channels. Directional patterns shall be deemed unacceptable.
6. Format: Sheets available in widths from 4' (1.22 m) to 6' (1.83 m) and 49'2" (15 m) long [min. 19'8" (6 m)/max. 59' (18 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 meet the minimum requirements listed.

1. Performance of Manufactured Product to conform to the following criteria:

Performance Criteria	Test Methods	Requirements	Results*
Elongation at Break	ASTM D412	≥100%	≥100%
Tensile Strength	ASTM D412	≥75 psi	≥75 psi
Hardness of wear layer (Shore A durometer)	ASTM D2240	55 ±5	55 ±5
Hardness of backing (Shore A durometer)	ASTM D2240	40 ±5	40 ±5
Thickness	ASTM F387	8 mm (±0.3 mm)	8 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	80-110	≥80

*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 not permitted onto 8 mm Super X Performance; minimum 10 mm thickness is required.

E. Materials:

1. Provide Super X Performance, 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. In cases where colored adhesive is not required, it may also be suitable to use PU 105 outdoors over a concrete base only. 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 A 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 concrete 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 concrete has been installed per specification, ensuring its surface is free of any bond inhibitor, and confirming acceptable moisture levels prior to gluing 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 concrete 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 concrete 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 concrete 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 concrete base works, designed by others, to corrected levels, and as is detailed in the project drawings and Master Specifications.
 - 2. Prepare outdoor concrete 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 concrete base, prior to the installation of the Synthetic Running Track Surfacing.

3.04 INSTALLATION

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.

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 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. 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.

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 Accessories following Manufacturer's current printed guidelines.
4. 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 guidelines, drawings and Master Specification.
2. All line markings shall be spray applied.

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