**SECTION 096566 – SYNTHETIC ATHLETIC FLOORING**

# PART 1 - GENERAL

* 1. ***DESCRIPTION****:*
		1. *Scope*

The complete installation of a prefabricated sheet rubber sports surfacing system including adhesive and game line striping as manufactured by Connor Sports.

* + 1. *Related work specified under other sections.*
			1. *CONCRETE SUBFLOORS…………………………………………….SECTION 03300*
				1. *Slab Depression: Equal to thickness of selected flooring (6, 8,10,12,13 or 14mm).*
				2. *Concrete Finish: Shall be steel troweled, dense and finished smooth, not polished.*
				3. *Slab Tolerance: A tolerance of 1/8" (3mm) in 10' (3m) radius shall be maintained throughout. Floor Flatness and Floor Levelness (FF and FL) numbers are not recognized.*
				4. *No concrete curing, hardening or sealing agents shall be applied to the concrete subfloor.*
			2. *MEMBRANE WATERPROOFING…………………………………….SECTION 07100*
				1. *Concrete subfloors on or below grade shall be adequately waterproofed, beneath, at perimeter walls, and on earth side of below grade walls.*
				2. *Type and extent of membrane shall be determined by the Project Engineer and installed by the General Contractor.*

3. THRESHOLDS………………………………………………………………..SECTION 08700

4. ATHLETIC EQUIPMENT……………………………………….........................SECTION 116600

# REFERENCES:

1. *American Society for Testing & Materials*
	1. *ASTM D 412: Standard Test Method for Tension Testing of Rubber and Elastomers*
	2. *ASTM D 1894: Standard Test Method of Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting.*
	3. *ASTM D 2240: Standard Test Method for Rubber Property—Durometer Hardness*
	4. *ASTM D 2632: Standard Test Method for Rubber Property—Resilience by Vertical Rebound*
	5. *ASTM D 3389: Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader)*
	6. *ASTM E 648: Standard Test Method for Critical Radial Flux of Floor-Covering Systems Using a Radiant Heat Energy Source*
	7. *ASTM E 662: Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials*
	8. *ASTM F 970: Standard Test Method for Static Load Limit*
	9. *ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete using "In Situ Probes"*
	10. *ASTM G 21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.*
2. *IAAF: Track and Runway Synthetic Surface Testing Specifications.*

# SUBMITTALS:

* + 1. *Manufacturers Product Information*
			1. *Submit (3) copies of Connor TruSport System Specification Sheets or as requested.*
		2. *Samples*

Submit (1) set of samples showing colors and texture of TruSport surface or as requested.

* + 1. *Shop Drawings*

Submit (1) set of shop drawings reflecting seam placement and layout.

* + 1. *Maintenance Literature*

Submit (3) copies of Connors TruSport maintenance instructions.

# QUALITY ASSURANCE:

* + 1. *Manufacturer*
			1. *Manufacturer shall be an established firm with a minimum of 10 years in business specializing in manufacturing prefabricated sheet rubber for athletic surfaces.*
			2. *Manufacturer shall be ISO 9001 & ISO 14001 certified.*
		2. *Flooring Contractor:*
			1. *The complete installation of the flooring system shall be performed only by an experienced flooring contractor with a minimum of three years of experience installing athletic surfaces and approved by the manufacturer.*
			2. *All work will be performed in accordance with the most recent printed installation instructions of the manufacturer.*

# DELIVERY, STORAGE AND HANDLING:

* + 1. *Materials must be delivered in manufacturer’s original, unopened and undamaged packaging with identification labels intact.*
		2. *The general contractor shall provide an area where stored materials can be maintained at 65 to 80 degrees F (18.3 to*

26.7 degrees C).

* + 1. *Store material upright in a secured area protected from exposure to harmful weather conditions on a clean, dry, flat surface protected from possible damage.*

# SITE CONDITIONS:

* + 1. *The prefabricated rubber sheet flooring specified herein shall not be installed until all trades including but not limited to, masonry, painting, plaster, tile, marble, terrazzo, carpentry, overhead mechanical trades', goals, scoreboard, electrical, and painters have finished in the installation area.*
		2. *The area will be closed and secured from all foot traffic and trades for duration of the installation and curing period.*
		3. *The building shall be enclosed, weather-tight, with permanent windows and lockable doors.*
		4. *Permanent heat, light and ventilation shall be installed and operating prior to, during and after installation.*
		5. *Subfloors shall be broom clean, dry and free from dirt, dust, oil, grease, paint, and alkali, concrete curing agents, hardening and parting compounds, old adhesive residue or other foreign materials.*
		6. *Moderate room temperature of 65 to 80 degrees F (18.3 to 26.7 degrees C) shall be maintained for a week prior to, during and for 72 hours after installation.*
		7. *Concrete tolerance of 1/8 inch (3mm) in ten foot (3m) shall be maintained throughout. High spots shall be ground level and low spots filled with a Portland base compound such as Ardex Feather Finish. No concrete curing, hardening or sealing agents shall be applied to concrete.*
		8. *Concrete must dry for a minimum of 30 days and “Determining Relative Humidity in Concrete with In-Situ Probes” not to exceed 85% respecting ASTM F2170. HVAC must be operational and with a constant temperature for 7 days prior to testing.*
		9. ***NOTE: SEE ASPHALT MIX AND REQUIREMENTS FOR DETAILED PROCEDURES AND INFORMATION. PLEASE CALL 847-278-0449 FOR MORE INFORMATION****.*
		10. *The installation area shall be closed to all traffic and activity during installation and for seven days following to allow drying/curing.*
		11. *After completion, area to be kept locked by general contractor. No other trades or personnel to be allowed on floor until accepted by owner.*
	1. ***WARRANTY****:*
1. *Connor Sports provides a limited warranty of three (3) years on materials. (A copy of the full warranty, with its Terms and Exclusions, is available from the authorized Connor Sports Dealer.) This warranty is expressly limited to the flooring materials (goods) supplied by Connor Sports. This warranty does not cover floor damage caused (wholly or in part) by fire, winds, flood, other unfavorable atmospheric conditions or chemical action, nor does it apply to damage caused by ordinary wear, misuse, failure to follow recommended maintenance instructions, abuse, negligent or intentional misconduct, aging, faulty building construction, concrete slab separation or movement, moisture migration either through slab or any other source, faulty or unsuitable subsurface or site preparation, settlement of the building walls or faulty or unprofessional installation of Connor Sports systems.*
2. ***Connor Sports warrants its Rubber Products to bond to the substrate surface only. If the surface of the substrate, which has been provided by others, delaminates from itself, crumbles, or fails for any reason it shall not and will not be covered by the Connor Sports material warranty****. In addition, under no circumstance, shall any part of the substrate be covered by the Connor Sports Warranty, including but not limited to; acceptable soil base, site work preparation, grading, asphalt base, asphalt mix, method of installation, integrity of the finished surface, birdbaths in asphalt surface, asphalt patches and/or repairs both during or after initial paving, delamination for any reason, crumbling, or anything related to the short and long term performance of the asphalt. Please refer to the asphalt section of the ASBA guidelines for the specifications for asphalt substrate warranty. Please also be aware Connor Sports cannot control nor warrant any work that is provided by the General Contractor or their subcontractors. Special consideration must be made to provide a suitable and long term asphalt substrate that will perform as intended. It is mandatory that the provided specifications are followed and industry leaders in the field of track construction are consulted before any work commences.*
3. *The foregoing warranty is in lieu of and excludes all other warranties not expressly set forth herein, whether express or implied, including, but not limited to any implied warranties of merchantability or fitness. Connor Sports and its contractors shall not be liable for incidental or consequential losses, damages or expenses, directly or indirectly arising from the sale, handling or use of the goods, or from any other cause relating thereto, and their liability hereunder in any case is expressly limited to the replacement of goods not complying with this agreement, or, at their election, to the repayment of, or crediting Buyer with, an amount not to exceed the purchase price of such goods, whether such claims are for breach of warranty or negligence.*

# PART 2 – PRODUCTS

* 1. ***MANUFACTURER****:*

Basis for design is TruSport as manufactured by Connor Sports.

#  MATERIALS:

1. *Material shall be prefabricated sheet rubber athletic flooring and highly resistant to UV or atmospheric agents.*
	1. *Only vulcanized, dual durometer sheet rubber with each layer having independent physical properties and biomechanical attributes will be accepted.*
	2. *Flooring must be highly resistant to UV and atmospheric agents.*
	3. *The Shore Hardness of the top layer surface will be greater than that of bottom layer with differentiated elasticity between the two.*
	4. *The surface layer shall be free recycled rubber granules and free of any different color fillers.*
	5. *Flooring surface shall be manufactured to maintain performance criteria, as stated by manufacturer, without defects, damage, or failure.*
	6. *Thickness shall be (choose one, 6, 8, 10, 12, 13, or 14mm)*
	7. *Color shall be (Select from standard, custom colors available at additional charge)*
	8. *Finish: Track Embossing*
	9. *Material shall be provided in rolls only.*
2. *Adhesive*

Two-component polyurethane as supplied by Connor.

1. *Game Line Paint*

Two-component polyurethane selected from standard colors.

# PHYSICAL PROPERTIES:

|  |  |  |
| --- | --- | --- |
| **Physical Properties** | **Standard** | **Specification** |
| Hardness Shore A | ASTM D 2240 | 55/40 (±5) |
| Modified Vertical Deformation (IAAF: 0.6-2.5mm) | IAAF (0.6-2.5) | 1.8mm |
| Force Reduction (0°C-50°C) | IAAF (35%-50%) | 40% |
| Resilience by Vertical Rebound | ASTM D2632 | 68 |
| Tensile Properties Strength | ASTM D 412-98 | ≥ 1.25 Mpa |
| Elongation at Break | ASTM D 412-98 | ≥ 200% |
| Coefficient of Friction (standard ≥ 0.50 wet) | ASTM D 1894 | ≥0.6 wet |
| Resistance to Fungi | ASTM G 21 | Non-growth |
| Spike resilient |  | Very Good |
| Critical Radiant Flux | ASTM E 648 | 0.59 W/cm2 (Class I) |
| Optical Density of Smoke | ASTM E 662 | <450, Class I |
| Color Stability |  | Good |
| Chemical Resistance |  | Good |
| UV Resistance |  | Good |
| Static Load Limit (250 lbs.) | ASTM F970-06 | ≤ 0.010 in. |
| Abrasion Resistance Taber(H18 Wheel, 1000 cycles, 1000g load) | ASTM D3389-05 | ≤ 1.8g (weight loss) |

***PART 3 - EXECUTION***

* 1. ***INSPECTION****:*
		1. *Inspect concrete slab for proper tolerance of 1/8 inch (3mm) in ten foot (3m). Report discrepancies to general contractor for correction.*

High spots shall be ground level and low spots filled with a Portland base compound such as Ardex Feather Finish.

* + 1. *Perform moisture testing of the slab. “Determining Relative Humidity in Concrete with In-Situ Probes” not to exceed 85% respecting ASTM F2170. Report results to the general contractor. See addendum in installation guide for details.*
			1. *HVAC must be operational and with a constant temperature for 7 days prior to testing.*
			2. *Allow further drying time if moisture tolerances are exceeded.*
		2. *Ensure all requirements from section 1.6 SITE CONDITIONS are completed and satisfied.*
		3. *All work required to put the concrete slab in an acceptable condition and provide correct working conditions for a successful installation is the responsibility of the General Contractor or Construction Manager.*

# INSTALLATION:

* + 1. *Install athletic flooring in accordance with current manufacturer's installation instructions*

1. Disc sand concrete in preparation to receive flooring material.

1. *Unroll flooring and allow relaxing overnight while maintaining a constant room temperature.*
2. *Thoroughly mix two-component polyurethane adhesive per manufacturer’s instructions and apply directly to concrete subfloor.*
3. *Install flooring into freshly applied adhesive, scribing and fitting neatly at walls, around columns and around door frames. Use matching urethane caulk at tight fit locations.*
4. *Roll material in multiple directions with a 100-pound (45.4 kg) roller to remove entrapped air.*
5. *Clean any adhesive that migrates between seams with recommended product.*
6. *Hold and weight all seams in place with cinder bricks. Leave weight in place for a minimum of 12 hours.*
	* 1. *Game Lines*
			1. *Use only high quality masking tape approved by Connor.*
			2. *Carefully layout and mask game lines as indicated on drawings.*
			3. *Prime area to receive paint per manufacturer's instruction.*
			4. *Thoroughly mix two-component game line paint.*
			5. *Apply paint by spray method*
		2. *Wall Base (optional)*

Install vinyl base anchored to walls with base cement.

* + 1. *Cleanup*
			1. *Collect and remove all bricks (weights)*
			2. *Remove all excess and waste materials from the area of work. Leave area clear from installation debris and empty containers.*

END OF SECTION 096566