

SECTION 321813 – SYNTHETIC TURF ATHLETIC FIELD**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Furnish all labor, materials, tools and equipment necessary to install, in place, all synthetic turf as indicated on the plans and as specified herein, including all related materials not specified under another section but required for the work, whether or not specifically referred to herein. The installation of all new materials shall be performed in strict accordance with the manufacturer's written installation instruction, and in accordance with all approved shop drawings.
- B. Related Sections:
 - 1. Division 31 Section "Earth Moving"
 - 2. Division 32 Section "Concrete Paving"
 - 3. Division 33 Section "Storm Drainage"

1.3 DEFINITIONS

- A. Contractor: Entity awarded contract to construct the synthetic turf athletic field; acting prime contractor.
- B. Installer: Entity to physically construct said portion of the synthetic turf athletic field.
- C. Manufacturer: Entity to make material to be sold to the contractor and/or installer.

1.4 SUBMITTALS

- A. Submit the following **with proposal on BID Day**.
 - 1. The base contractor (if different from the turf contractor employees) must provide a list of at least five (5) synthetic turf bases completed within the last 3 years, including an owner representative and telephone number.
 - 2. Synthetic Turf – One sample, approximately 12" X 12" filled; and one rag sample (unfilled).
 - 3. Specification sheet of the fiber and carpet system provided in the sample.
 - 4. A statement naming the manufacturer of the grass-like fibers.
 - 5. Yarn manufacturer specification sheet of the specified fiber to be used within the system, per the products section of this specification.
 - 6. Quality assurance information as delineated in paragraphs 1.6A, 1.6B (if applicable), 1.6C, 1.6D, and 1.6E below.
 - 7. A sample of the warranty, noting any exceptions to the warranty information listed in the warranty section of this specification.
 - 8. **If there are items within these specifications that the submitting party cannot comply with, these must be identified in a substitution request submitted to the architect no less than 96 hours prior to bids being due. The architect will then determine if such deviation is approved or denied. Deviations to these**

specifications may at the discretion of the owner be grounds for dismissal of the contractors bid proposal.

- B. Prior to order of materials, the Contractor shall submit the following:
1. Signed Certification Letter from the contractor stating that the synthetic turf products to be installed match what was submitted as part of item 1.4A.
 2. Shop Drawings
 - a. Shop drawings shall be prepared at the scale of the construction documents and contain all pertinent information regarding installation. These drawings shall be submitted to the Owner for approval prior to the manufacturing and shipment of materials.
 - b. Submit drawings for:
 - I. Seaming plan.
 - II. Installation details; edge details, methods of attachment, back stop detail, other inserts, method of cutting around backstop and others inserts, etc.
 - III. Striping plan; layouts showing any field lines, markings and boundaries, and field logos per project drawings.
 - IV. Other details on construction, especially any details that may deviate from these plans and specifications. Deviations to these plans and specifications may at the discretion owner be grounds for dismissal of the contractors bid proposal.
 3. Turf 'rag' samples illustrating range in color selections with details of product matching the specifications described in Part 2 - Products.
- C. Prior to the beginning of installation, the contractor (installer) of the synthetic turf shall inspect the subbase and supply a signed letter of Subbase Acceptance for the purpose of obtaining contractor's warranty for the finished synthetic playing surface and base drainage system.
- D. Prior to Final Acceptance, the Contractor shall submit the following:
1. Three (3) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and striping.
 - a. Provide descriptions of all equipment recommended for maintenance and repair, including both equipment provided by the Contractor, and by the owner.
 2. Certified test data indicating the finished field meets the required shock attenuation, as per ASTM F355 (method) and ASTM F1936 (procedure). If the field tests less than the acceptable limit (softer), the contractor can re-test after 90 days of use and weathering, prior to beginning modifications to the infill content.
 3. For the carpet installed, submit certified copies of independent (third-party) laboratory reports on the following ASTM tests:
 - a. Pile Height, Face Weight & Total Fabric Weight – ASTM D418
 - b. Primary & Secondary Backing Weights – ASTM D418
 - c. Tuft Bind – ASTM D1335
 - d. Grab Tear Strength – ASTM D1682

1.5 QUALITY ASSURANCE

- A. Synthetic Turf Contractor (Installer)'s Experience:
1. The synthetic turf installer must be pre-approved by the Miracle League Field organization.

B. All contractors must meet the following criteria:

1. Have proper Contractor's license, in good standing, and have never had a license revoked.
2. Have not had a Surety or Bonding company finish work on any contract within the last ten (10) years.
3. Have not been disqualified or barred from performing work for any public Owner or other contracting entity.
4. No current litigation for unacceptable work or non-completion of work.

C. Warranty: The Contractor shall submit its Single Source Warranty that guarantees the usability and playability of the full synthetic turf system for its intended uses for an **eight (8)** year period commencing with the date of Substantial Completion, against all defects in workmanship of the subgrade, drainage, gravel foundation, yarn fibers, and turf surface. The warranty coverage shall not be limited to the amount of the usage.

1. The warranty submitted must have the following characteristics:

- a. Must provide full coverage for **eight (8)** years from the date of Substantial Completion.
- b. Must warrant materials and workmanship, including but not limited to gravel base stability, drainage rates, seaming materials and adhesives.
- c. Must warrant that the finished and accepted playing field elevation shall not vary by more than 0.1' due to instability of the gravel foundation (unrelated to existing, pre-developed subgrade soil conditions) or drainage system and that the field drainage rates will remain at or above design capacity for the life of the warranty.
- d. Must have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
- e. Must be a warranty from a single source covering workmanship and all self-manufactured or procured materials of the turf, turf system, base, and drainage.
- f. Warrant that the yarn used to make the grass-like tufts will maintain its UV stability and tensile strength such that the strength of the fiber when measured in accordance with ASTM D-2256 will not decrease by more than 50% during the warranty period due to breakdown of UV stability.

D. Manufacturer Qualifications

1. Must specialize in manufacturing (tufting) the products and fibers specified in this section.
2. Must be experienced in the manufacture of this specific type of infilled synthetic grass system. This includes the tuft fiber, backing(s), and backing coating.
3. Shall have manufactured (tufted) more than fifteen million (15,000,000) square feet of polyethylene tufted turf for sports field use in the past five (5) years.
4. The manufacturer must be a member of the Synthetic Turf Council (STC).

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to the site in wrapped, unopened condition.
- B. Store products in safe, clean location and in a manor to protect from accidental damage

1.7 EXISTING CONDITIONS

- A. The contractor shall review and accept existing conditions prior to bidding. The contractor shall again review and accept existing conditions prior to beginning the installation.

- B. The contractor shall protect all existing conditions that are not part of the scope of work and repair any damage to existing conditions that occurs during this scope of work.

1.8 LAYOUT

- A. See drawings for layout. Contractor shall survey, verify all measurements and submit full field layout as a dimensioned drawing with all proposed graphics included, for owner review/approval, notifying of any conflicts. Provide all field lines and other associated markings as indicated on the drawings.

1.9 TEMPORARY UTILITIES

- A. Contractor may connect to the Owner's existing utilities, as available, to supply necessary water, adequate lighting and electricity for installation.
- B. Contractor shall supply temporary sanitation facilities, including paying all costs associated therewith.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. A-Turf

2.2 MATERIALS

- A. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in location of installation, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation.
- B. The finished playing surface shall appear as mowed grass with no irregularities or wrinkles and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use. The system shall be ideal for baseball, football, soccer, intramurals and recreational use.
- C. Synthetic Turf: Alternate 2
 - 1. CX140 Miracle League Turf with pre-adhered foam pad
- D. Other provisions shall be as per specific manufacturer's standard specifications and recommendations as submitted to the Architect. See "3-Part Specification: Miracle League Turf".

PART 3 - EXECUTION

3.1 GENERAL

- A. The installation shall be performed in full compliance with approved shop drawings.
- B. Only trained technicians skilled in the installation of athletic caliber synthetic turf systems, working under the direct supervision of certified field builder's supervisors, shall undertake the placement of the system.

- C. The surface to receive the synthetic turf shall be inspected and certified by the installer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

3.2 SITE WORK

- A. Fine-grade subgrade to elevations required to create final finish turf infill elevation flush with proposed curb surface. Field to be on uniform plane and grade.
- B. Drainage: Install drainage according to the plans and specifications and connect the drainage to storm water structures as indicated on the drawings.
- C. Drainage Testing: **Contractor must provide drainage testing per Miracle League Field's "Test Preparation of Asphalt for Installation of Surface and Release Form" in Specialty Asphalt Specification.**

3.3 INSTALLATION

- A. The Owner reserves the right to inspect the subbase by means of a laser level. Based on the owner's report of the subbase, the Contractor shall fine grade the subbase, including properly rolling and compacting the base, until deemed suitable by the owner.
- B. The contractor shall thoroughly inspect all materials delivered to the site, both for quality and quantity, to assure that the entire installation shall have sufficient material to maintain proper sand/rubber ratios.
- C. Synthetic turf shall be loose laid across the field, stretched, and attached to the perimeter edge detail. Turf shall be of sufficient length to permit full cross-field installation, from sideline to sideline. Turf must also be attached via a nailer board to the curbs.
- D. Seams shall be adhered using reinforcing tape and high-grade outdoor synthetic turf adhesive. Seams may also be sewn at the contractor's choice. Seams shall be flat, tight, and permanent with no separation or fraying.
- E. Infill materials must be brought to the site and stockpiled for inspection by the owner. Infill materials must be mixed by an experienced installer. The sand/rubber blend shall be applied in numerous thin lifts using special broadcasting equipment. The turf shall be raked and brushed properly as the mixture is applied. The infill material shall be installed to a depth per above specifications. The mixture can only be applied when dry. (Review by engineer does not relieve contractor of responsibility to ensure that the synthetic turf system meets the specified impact attenuation requirements).

3.4 FIELD MARKINGS AND DECORATIONS

- A. Markings are to be per the plan and must comply with all Miracle League guidelines.

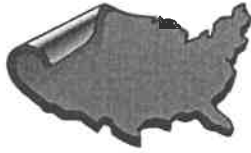
3.5 CLEAN UP

- A. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items.
- B. All usable remnants of new material shall become the property of the Owner.
- C. The Contractor shall keep the area clean throughout the project and clear of debris.

- D. Surfaces, recesses, enclosures, etc., shall be cleaned, as necessary, to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

END OF SECTION 321813

3-Part Specification: **Miracle League Turf**



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PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Miracle League Turf recreation & sport surfacing system.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. In the absence of related sections, delete paragraph below.

Specifier Note: Site materials and methods, drainage, equipment, fencing, substrate preparation and similar work is provided by others and is described in other sections. Consult manufacturer for specific substrate preparation requirements. Edit, retain or delete paragraph below to suit project requirements and specifier practice.

B. Related Sections: Division 2 Sitework Sections: Materials and Methods, Excavation, Asphalt Paving, Concrete Paving, Sub-Drainage, Storm Drainage, Fencing, Equipment and Structures.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard. It is a listing of all references used in this section.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.

5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide a 1-layer synthetic grass surfacing system that has been designed, manufactured and installed to meet the following criteria:

1. Flammability (ASTM D2859): Pass.
2. Tensile Strength (ASTM D412): 60 psi (413 kPa).
3. Tear Resistance (ASTM D624): 140%.
4. Accessibility: Comply with requirements of ASTM F1951.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 mm x 229 mm) minimum.

D. Quality Assurance/Control Submittals: Submit the following:

1. Certificate of qualifications of the surfacing installer.

E. Closeout Submittals: Submit the following:

1. Warranty documents specified herein.

Specifier Note: Article below should include statements of prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.05 QUALITY ASSURANCE

A. Qualifications: Utilize an installer approved and trained by the manufacturer of the surfacing system, having experience with other projects of the scope and scale of the work described in this section.

B. Certifications: Certification by manufacturer that installer is an approved applicator of the surfacing system.

Specifier Note: Article below should include specific protection and environmental conditions required during storage. Coordinate article below with Division 1 Product Requirements Section.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

Specifier Note: In article below, state physical or environmental limitations or criteria for installation such as weather, temperature, humidity, ventilation or illumination required for proper installation or application.

1.07 PROJECT/SITE CONDITIONS

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

Specifier Note: Coordinate subparagraph below with manufacturer's warranty requirements.

1. Warranty Period: 7-year warranty from completion of work.

PART 2 – PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 RECSPOUR TURF SURFACING SYSTEM

Specifier Note: Retain or delete paragraph below per project requirements and specifier's practice.

A. Manufacturer: Surface America, Inc.

1. Contact: PO Box 157, Williamsville, NY 14231; Telephone: (800) 999-0555, (716) 632-8413; Fax: (716) 632-8324; E-mail: info@surfaceamerica.com; website: <http://www.surfaceamerica.com>.

B. Proprietary Products/Systems. Miracle League Turf recreation & sport surfacing system, including the following:

1. Miracle League CX140 Turf:

The synthetic turf material shall be in accordance with the following:

Turf surface includes two fibers: polyethylene slit-film with texturized nylon thatch.

The fiber shall be low friction fiber, measuring not less than 3/4" high. The low friction fiber shall be specifically designed to virtually eliminate abrasion.

The total fabric weight shall not be less than 125 ounces per square yard (includes 5mm polyurethane foam backing). The low friction non-abrasive fiber shall be treated with a UV inhibitor.

The carpet shall be delivered in 12' or 15' wide rolls by lengths best suited for the project.

The standard fiber color is field green, and treated with UV inhibitor (guaranteed a minimum of five years). Additional colors are red, white, blue, yellow, and black.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

Specifier Note: Specify proportions and procedures for site mixing materials. Mixing is the preparation of materials for use and is considered to be part of the manufacturing process.

PART 3 – EXECUTION

Specifier Note: Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the surfacing system. New asphalt must be fully cured – up to 30 days. New concrete must be fully cured – up to 7 days.

B. Do not proceed with installation until unsuitable conditions are corrected.

Specifier Note: Specify actions required to physically prepare the surface, area, or site or to incorporate the primary products of the section.

3.03 INSTALLATION

A. Do not proceed with surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

B. Turf installation:

1. Rough cut synthetic grass rolls for installation.
2. Full glue down with turf adhesive

3.04 PROTECTION

- A. Protect the installed surface from damage resulting from subsequent construction activity on the site.