

ProGrass Game Turf

Sand and Rubber Infill

SYNTHETIC GRASS SYSTEM

GENERAL SPECIFICATIONS

SECTION 1: GENERAL

1.0 SCOPE OF WORK:

It shall be the responsibility of the successful turf contractor to provide all labor, materials, equipment and tools necessary for the complete installation of a synthetic grass system, with a specially formulated resilient rubber infill system and a porous vertical drainage stone base. The infilled turf system and the porous vertical drainage system shall consist of, but not necessarily be limited to, the following:

- 1.1 A vertical draining field base consisting of a six-inch layer Open Graded Stone (OGS) with a panel underdrain system installed upon a geotextile membrane. The end of the panel drain is placed directly into the perimeter ditch and covered with free draining stone, which discharges into a designated storm water outlet.
- 1.2 A complete synthetic grass system, consisting of nominal 2 inch to nominal 2.25 inch long, 100% polyethylene, mono filament fiber, tufted to a double primary backing and coated with a urethane secondary backing. The turf backing will be perforated to insure positive drainage.
- 1.3 A resilient infill system consisting of a specially formulated homogeneous mixture of sand and ambient ground rubber materials, specifically designed to provide the feel, performance, and safety of an optimally maintained natural grass surface. The finished surface shall have the planarity and subtle undulations normally associated with typical natural grass athletic fields.

SECTION 2:

2.0 QUALIFICATIONS AND SUBMITTALS:

Prospective bidders and/or the turf contractor shall be required to comply with the following:

- 2.1 It is the owners desire to insure both quality materials and installation. Therefore all prospective bidders must comply with the following:
 - a. All bidders and/or turf contractors must have been actively installing infilled synthetic grass systems for a minimum of three years.
 - b. All bidders and/or turf contractors must directly employ the installers of the synthetic grass and layered infilled turf systems. Subcontractors shall NOT be acceptable for the infilled synthetic grass installation.
 - c. All bidders and/or turf contractors shall demonstrate that they meet the minimum three-year experience requirement by submitting in writing the project names, contacts and telephone numbers of at least ten installations, where the bidders have installed infilled synthetic grass systems over the last three years.

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SECTION 2: QUALIFICATIONS AND SUBMITTALS (continued)

- 2.2 All prospective bidders and/or turf contractors must submit written compliance with section 2, paragraph 2.1, sub paragraphs a. through c., to the design professional or the owner's designated representative 10 days in advance of the bid opening. Additionally, all bidders must submit for approval a 12 inch by 12-inch sample, detailed specifications, and a complete material testing of the synthetic grass to be used on this project. The design professional or the owner's representative will notify all prospective bidders in writing of specification and product approval, prior to the bid opening.
- 2.3 All designs, markings, layouts, and materials shall conform to all currently applicable National Federation or NCAA rules and other standards that may apply to this type of synthetic grass installation.
- 2.4 The bidder shall provide evidence of a bonding capacity of no less than 10 million dollars from a licensed best-rated surety.
- 2.5 All prospective bidders shall include a sample manufacturer's warranty with their bid.

SECTION 3: VERTICAL DRAINAGE AND BASE CONSTRUCTION AND DRAINAGE

3.0 BASE CONSTRUCTION:

The contractor awarded the base construction is required to provide with the bid the following: The overall base design and the vertical drainage system. The design and materials must be consistent with the following:

- 3.1 The sub-grade minimum slope must be .5% to 1.5% (depending on site conditions) from the centerline of the field to the rim of the perimeter ditch. The site sub-grade shall be graded to have a level area at the center of the field between the 20-yard lines and slope towards the perimeter drain. The planarity must not exceed more than ½ inch in 10 feet.
- 3.2 After the excavation is completed, the sub-base shall be proof rolled or independently tested to insure proper stability and compaction.
- 3.3 A 4oz. non-woven geotextile membrane shall be installed upon the sub-grade for separation between the aggregate and the sub-grade and to assist positive water flow. The geotextile specification will be determined based upon the existing site conditions and drainage design.
- 3.4 A collector drain appropriately sized shall be installed around the perimeter of the proposed turf installation. The collector drain shall be connected to outlets as directed by the architect/owner. The number of outlets, size of the field, and the aggregate base thickness shall be considered in determining the size of the perforated collector drain. The perimeter collector drainage trench shall be lined with geotextile and filled with clean angular drainage stone.
- 3.5 Properly sized under field panel drain system that shall be installed not greater than 25 feet on center, at 45-degree angle, depending on conditions. These field drains will be placed directly into the perimeter ditch.
- 3.6 All open graded aggregate material must be free draining and approved, prior to installation, by the turf manufacturer both for gradation and overall stability. Depending upon soil conditions, drainage design, etc., the aggregate thickness component of the base will be determined.

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SECTION 3: VERTICAL DRAINAGE AND BASE CONSTRUCTION AND DRAINAGE (continued)

- 3.7 The turf manufacturer must approve the aggregate base stone prior to installation, so the required gradation, permeability and stability are met.
- 3.8 The finished grade of the aggregate base prior to the installation of the synthetic grass shall not vary more than ¼ inch over 10 feet. It is required that a laser grader be used to meet these parameters.
- 3.9 Gradations of the “OGS” Target base stone aggregate is as follows: The aggregate materials must be 100% fractured by mechanical means, with elongated characters on each individual particle. Round aggregates are prohibited.

Sieve	OGS Base Stone
1.5”	100
1”	95 - 100
¾”	75 - 90
½”	55 - 75
3/8”	40 - 70
¼”	25 - 60
#4	20 - 45
#8	10 - 25
#16	10 - 20
#30	0 - 8
#50	0 - 5
#100	0 - 4
#200	0 - 3

SECTION 4: MATERIALS

4.0 SYNTHETIC GRASS MATERIALS:

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

- 4.1 The fiber shall be a minimum of 10,000 denier, low friction, and mono filament fiber measuring from a nominal 2 inch to a nominal 2.25 inches high. The low friction mono filament fiber shall be specifically designed to virtually eliminate abrasion. SYSTEMS WITH SHOCK PAD ENHANCEMENTS WILL NOT BE ACCEPTED AS EQUAL.

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Section 4: (continued)

- 4.2 The tufted fiber weight shall not be less than 38 ounces per square yard. The low friction fiber shall be 100% polyethylene, mono filament fiber, with UV inhibitors. The carpet shall be perforated to promote maximum drainage. CARPETS WITHOUT PERFORATIONS WILL NOT BE ACCEPTABLE.
- 4.3 The turf's primary backing shall be a layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of a minimum of 20 oz. of heat-activated urethane to permanently lock the fiber tufts in place, with a minimum tuft bind of 8 pounds.
- 4.4 The turf shall be delivered in 15-foot wide rolls with the four 4 inch white, 5-yard lines tufted into each roll. The rolls shall be of sufficient length to go from sideline to sideline. The perimeter white line shall also be tufted into the individual sideline rolls.
- 4.5 The infill shall consist of specially formulated homogeneous mixture of sand and ambient ground rubber materials.
- 4.6 Hash marks, numbers, arrows, soccer, field hockey, lacrosse or other designations shall be painted with multiple applications of a suitable paint approved by the turf manufacturer, or at additional cost, field inlaid.

SECTION 5: INSTALLATION

5.0 EXECUTION:

The turf contractor shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing, by the manufacturer's representative, and submitted to the architect/owner, verifying that the changes do not in any way affect the warranty.

- 5.1 The OGS stone base must be certified by the turf contractor as to acceptance for planarity and installation of the synthetic grass system.
- 5.2 The turf rolls are to be installed directly over the properly prepared aggregate base. Extreme care should be taken to avoid disturbing the aggregate base, both in regard to compaction and planarity. It is suggested that a 2.5 ton static roller is on site and available to repair and properly compact any disturbed areas of the aggregate base.
- 5.3 The full width rolls shall be laid out across the field. Utilizing standard state of the art sewing or gluing procedures, each roll shall be attached to the next. When sewing, each seam will be stitched. When all of the rolls of the playing surface have been installed, the sideline areas shall be installed at right angles to the playing field turf. The perimeter white line, tufted into the sideline rolls, shall be sewn or glued to the properly squared and cut playing field roll ends. Sewing or gluing is dependent upon site conditions and/ or the Owner's prior written specification.
- 5.4 Gluing will be used indoors or outdoors to repair problem areas, corner completions, and to cut in any hash marks, numbers, directional arrows, individual yard marks, or specific inlays as required by the specifications.
- 5.5 The infill material shall be spread evenly with a large spreader, (minimum 5 foot wide) in multiple layers of homogeneously mixed sand and ambient ground rubber. Between applications, the infill area shall be brushed with a motorized rotary brush. Infill depth depends upon site conditions, with proper amount applied to ensure specified G-Max

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requirements.

SECTION 6: PROJECT CLOSEOUT

6.0 MAINTENANCE & WARRANTY:

The turf installer and/or the turf manufacturer must provide the following:

- 6.1 The turf manufacturer's warranty that covers defects in materials and workmanship of the turf for period of eight (8) years from the date of Substantial Completion.
- 6.2 The manufacturer's warranty shall include general wear and damage caused from UV degradation. The warranty shall specifically exclude vandalism and acts of God beyond the control of the owner or the manufacturer.
- 6.3 The manufacturer's warranty shall be limited to repair or replacement of the affected areas, at the option of the manufacturer, and shall include all the necessary materials, labor, transportation cost, etc. to complete said repairs. All warranties are contingent on the full payment by the owner of all invoices.
- 6.4 The turf manufacturer shall include a grooming attachment to be pulled by the owner's equipment.
- 6.5 Manufacturer's written maintenance manual.