



# Artificial Turf – IMPACT 40

PROPERTY	DESCRIPTION
Primary/Stalk Yarn Polymer	52% Polyethylene
Secondary/Thatch Yarn Polymer	48% Nylon
Yarn Cross Section	Polyethylene Slit-Film/Texturized Nylon
Standard Colors	Field Green, Royal Blue, Black, White, Red, Yellow
UV Stabilized	Yes
Fabric Construction	Tufted
Coating Types	5mm Polyurethane Foam w/fleece
Perforations	Not Standard – Custom Available
Polyethylene (Slit-Film) Yarn Denier/Ends	5040/1
Texturized Nylon Denier/Ends (Thatch)	4400/8
Infill	N/A
Pile Height	¾"
Pile Weight	40 oz.

## RECOMMENDED INSTALLATION NOTES

### A. CONCRETE SUBFLOORS

- a. The general contractor shall furnish and install the concrete subfloor depressing the slab sufficiently to accommodate the turf system. The slab shall be steel troweled smooth to a tolerance of 1/4" in any 10' radius by the general contractor. High spots shall be ground level, and low spots filled in with approved leveling compound by the general contractor to the full approval of the flooring contractor.

### B. MEMBRANE WATERPROOFING-SECTION

- a. Concrete subfloors on or below grade shall be adequately waterproofed beneath the slab and at the perimeter walls and on earth side of below grade walls by general contractor using suitable type membrane.

### C. THRESHOLDS – SECTION 08\_\_\_\_

### D. STANDARD INSERTS – SECTION 11\_\_\_\_

## REFERENCES

### A. ATSM Standard Test Methods

- **D1577** – Standard Test Method for Linear Density of Textile Fiber
- **D5848** – Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering
- **D418** – Standard Test Method for Testing Pile Yarn Floor Covering Construction
- **D1338** – Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
- **D1682** – Standard Method of Test for Breaking Load and Elongation of Textile Fabrics
- **D5034** – Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
- **F1015** – Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces
- **F1551** – Standard Test Methods for Water Permeability
- **D2859** – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
- **F355** – Standard Test Method for Shock-Absorbing Properties of Playing Surfaces
- **F1936** – Standard Test Method for Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field
- **D1557** – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. National Federation of High School (NFHS) Rules, as applicable. FIFA Rules of the Game or NCAA Soccer Rules, as applicable.

C. ASBA Sports Fields Contractor Manual

D. Carpet & Rug Institute suggested guidelines.

E. STC Suggested Guidelines for the Essential Elements of Synthetic Turf Systems

## RECOMMENDED SITE PREPARATION

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- A. **A 24 Hour Relaxation Period is recommended before gluing down turf to prevent shrinking and /or expanding after glue down. IDEAL temperatures should be above 70 degrees for installation.**
- B. **When turf is delivered:** Check its texture, color, and style; make sure there are no visible defects before installation. Be sure the installer will adhere to the CRI 105 installation methods ([www.carpet-rug.com](http://www.carpet-rug.com)). Among other things, it requires for proper installation that turf must be power-stretched to minimize wrinkling and rippling. Seam edges must be sealed with appropriate adhesive to prevent delaminating and edge ravel.
- C. **Floor Preparation (when not using seaming tape):** Each subfloor shall be inspected to determine the special care required to make it a suitable foundation for turf. All cracks 1/8 inch (3 mm) wide or protrusions over 1/32 inch (.8 mm) should be ground down or leveled.
- D. **Temperature and Humidity:** The environment in which the turf is to be installed must be controlled with the temperature between 65o F and 95o F (18o C and 35o C) and the relative humidity between 10%and 65%. If installing over concrete, the slab temperature should not be less than 65o F (18o C). These conditions must be maintained for at least 48 hours before, during, and 48 hours after the installation.
- E. **Concrete:** Concrete shall be cured, clean, and dry. If the turf is to be installed using an adhesive, the concrete shall be free of paint, dirt, grease, oil, curing or parting agents, and other contaminants, including sealers, that may interfere with the bonding of the adhesive. Whenever a powdery or porous surface is encountered, a primer compatible with the adhesive shall be used to provide a suitable surface for the glue-down installation. Patching of cracks and depressions shall be made with appropriate and compatible latex or polymer fortified patching compound. Do not exceed manufacturer's recommendations for patch thickness. Large patched areas must be primed.
- F. **Moisture Testing (when not using seaming tape):** Concrete floors, even with adequate curing time, can present an unacceptable moisture condition by allowing excessive amounts of moisture vapor to pass through to the surface. This can be a problem even on suspended concrete floors. All concrete floors should be tested for moisture emission rate by utilizing an anhydrous calcium chloride moisture test kit available from installation supplies and accessories distributors. This quantitative method is very precise and must be conducted carefully, with strict attention to the test kit manufacturer's detailed instructions. Moisture emission rate is expressed in lbs/1000 sq. ft. /24 hours. Because the calcium chloride test for emission rate requires 3 days to

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conduct, proper installation planning is a must. As a general guideline, an emission rate of 3 lbs (1.4 kg) or less is acceptable for most turf. In the range from 3 lbs to 5 lbs (1.4 to 2.3 kg), carpet with porous backings can usually be installed successfully; but the risk of moisture-related problems increases. Since some floor covering products are less tolerant of moisture than others, always consult the individual manufacturer to determine the emission rate for specific products. When any or all corrective procedures have been completed, the finished sub-floor surface must be re-inspected, with the same representatives attending as the initial inspection. If required, additional repair and inspections are to be conducted until the sub-floor surface is deemed acceptable by the Engineer and Synthetic Turf Installer

- G. Once the sub-floor surface has been deemed acceptable, the Contractor shall submit a written certificate indicating the acceptance of:
  - 1. The sub-floor construction finished surface as totally suitable for the application of the selected synthetic turf system, and
  - 2. The sub-floor construction as totally suitable for work under this section to proceed with the final installation and fully warrant the athletic surface installation for the period and conditions specified herein.
- H. Commencement of work under this section shall constitute acceptance of the work completed under other sections by the Contractor, acceptance of dimensions of the sub-floor, and hence, no claims for extra work based upon these conditions will be permitted.

### ENVIRONMENTAL CONDITIONS

- A. Install synthetic turf surfacing only when ambient air temperature is 35 F or above and the relative humidity is below 35% or as specified by the product manufacturer. Installation will not proceed if rain is imminent.
- B. Install product only when prepared sub-floor is suitably free of dirt, dust, and petroleum products, is moisture free and sufficiently secured to prevent unwanted pedestrian and vehicular access.

### QUALITY CONTROL

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- A. **Manufacturer Qualifications:** Company specializing in manufacturing products specified in this section. The Turf Provider:
1. Basis of design shall be “IMPACT 40” synthetic turf system as provided by fitGear Solutions. (270) 227-2332, <http://www.fitgearsolutions.com/>
  2. Materials other than those listed must be approved 15 days prior by written addendum. Materials from non-approved manufacturers will not be accepted.
  3. Must be experienced in the manufacturing of synthetic grass systems with the same fiber as specified.
  4. Must have at least 30 fields of 16,000 sq. ft. or more of the specified material, fiber, infill material and backing, or similar system, in play in the United States.
  5. Manufacturer must be a member in good standing with the STC.
  6. Manufacturer must utilize best practices as certified by ISO-9001 and ISO-14001.
  7. Manufacturer must be owned and operated in the U.S.A.
  8. Manufacturer must have no periods of insolvency over the last 25 years.
- B. **Installer Qualifications:** Company specializing in performing the work of this section.
1. The Synthetic Turf Installer must provide competent workmen skilled in this type of synthetic grass installation. All technicians must have installed tall pile synthetic turf.
  2. The designated Supervisory Personnel on the project must be certified, in writing by the Turf Manufacturer, as competent in the installation of this material, including seaming and proper installation of the infill mixture.
  3. Installer to follow CRI (Carpet and Rug Institute) guidelines.
- C. Prior to the beginning of installation, the Synthetic Turf Installer shall inspect the sub-floor. The installer will accept the sub-floor in writing when the general contractor provides test results that are in compliance with the synthetic turf manufacturer’s recommendations and as stated herein.
- D. The Synthetic Turf Installer shall provide the necessary testing data to the Owner that the finished field meets the required initial shock attenuation, as per ASTM F1936.
- E. Remove defective Work, whether the result of poor workmanship, defective products or damage, which has been rejected by the Engineer as unacceptable. Replace defective work in conformance with the Contract Documents.

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1. The pile fiber possess the following characteristics:

Characteristic	Value	Test
Linear Density (Denier)	9,000 Combined	ASTM D 1577
Yarn Thickness	100 Microns (slit); 100 Microns (mono)	ASTM D 3218
Pile Weight*	40 oz./yd <sup>2</sup>	ASTM D 5848
Fiber manufacturer must be from the same source		
The above specifications are nominal. *Values are +/- 5%.		

2. The pile fabric shall possess the following physical characteristics:

Characteristic	Value	Test
Finished Pile Height*	3/4" (19mm)	ASTM D 5823
Product Weight (total)*	125 oz./yd <sup>2</sup>	ASTM D 3218
Primary Backing Weight*	7.4 oz./yd <sup>2</sup>	ASTM D 2256
Secondary coating Weight**	78 oz./yd <sup>2</sup>	ASTM D 5848
Fabric Width	12' (3.6m)	ASTM D 5793
Tuft Gauge	1/4"	ASTM D 5793
Grab Tear Strength	200-1b-F	ASTM D 5034
Tuft Bind	>8-1b-F	ASTM D 1335
Infill (Sand)*optional	2 lbs Silica Sand	None
Except where noted as a minimum, the above specifications are nominal.		
* Values are +/- 5%. **All values are +/- 3 oz./yd <sup>2</sup> .		

## A. Backing Material

### a. Primary Backing:

- i. Primary backing is a dual layered woven polypropylene material.
- ii. Primary backing system weight is 7.0 ounces/square yard.

### b. Secondary Backing:

- i. Secondary backing system weight is 75 ounces/ square yard.



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- B. The turf material is non-combustible and passes the DIN standard Pill Burn test or ASTM D 2859.

### SYNTHETIC GLUE MATERIAL

- A. Adhesive products shall be approved by fitGear Solutions, or the engineer.
- B. Any adhesive products required for the installation of a proposed turf system shall be purpose-suited to the system. The material and application methods shall be as recommended by the adhesive manufacturer.