

DOG SPECIFIC SYNTHETIC GRASS INDOOR SURFACE SPECIFICATIONS:

K9Grass Endura

1.1 DESCRIPTION OF WORK

The contractor shall provide all labor, materials, equipment, and tools necessary for the complete installation of a knitted "no infill" synthetic grass dog surface with a stable draining base. The complete synthetic grass system shall consist of, but not necessarily be limited to the following:

- A. Area of construction with the extent of artificial turf work as shown on the drawings.
- B. Subgrade, base, and drainage construction as specified in Section 2 and Section 3 of this document.
- C. Product shall be a knitted synthetic grass product (not tufted) and contain an antimicrobial agent while meeting or exceeding all guidelines as established herein. For characteristics not specifically stated, shall meet or exceed all guidelines published by the Synthetic Turf Council.
- D. The synthetic grass surface shall be specifically designed, manufactured, and installed for the intended use as a commercial/high use dog surfacing solution. Plastic perimeter boards (typically 1 1/4" x 2 1/2" laid flat) are to surround the entire area for anchoring of the turf. The top edge of this surface is to be a minimum of 1/2" below any adjacent solid surfaces where there could be foot traffic.
- E. Stainless steel screws, a minimum of 1" in length, aluminum tack strips, and aluminum cover strips are recommended to anchor the synthetic turf to the perimeter boards.

1.2 SYSTEM PERFORMANCE

Contractor shall ensure that products for pet/dog system meet the following performance requirements:

- A. The components, as well as the installation methods utilized, shall be designed and executed in a manner to hold up to the unique challenges dogs present. The materials as herein after specified shall hold up to recommended maintenance procedures (which includes running a vacuum over it), be resistant to insect infestation, and allow the free flow of water vertically through the surface and into the drainage system below.
- B. The seams of all system components shall provide a permanent, tight, secure, and hazard free surface. The installed synthetic grass and drainage system shall allow for drainage and water flow through the system at a rate of no less than 2500" per hour.

1.3 SERVICE AND QUALITY ASSURANCE

Synthetic grass vendor shall provide ongoing service, quality assurance, and warranty consisting of, but not necessarily be limited to, the following:

- A. The synthetic grass vendor must provide competent workmen skilled in this type of dog surface installation. The synthetic grass vendor shall provide a qualified installation foreman to coordinate and review the component parts of the synthetic grass system.
- B. The synthetic grass vendor and installer must be experienced with no less than three completed commercial dog installations (1500 sf or greater and not less than three successful indoor installations including flushing system) where a knitted synthetic grass surface was installed. Installer must be competent in the installation of this material, including attachment of seams, proper trimming, and attaching techniques prior to the start of turf installation.

- C. The synthetic grass vendor shall submit its manufacturer's warranty, which warrants the synthetic grass product:
 - I. Provide coverage of synthetic grass for a minimum of fifteen (15) years from the date of substantial completion.
 - II. Warrant that the materials installed meet or exceed the product specifications.
 - III. Be from a single source (certified by manufacturer) covering workmanship and all materials.
 - IV. Assure the availability of exact or substantially the same replacement materials for the synthetic grass system for the full warranty period.
 - V. Include general wear and damage. The warranty may specifically exclude vandalism and Acts of God beyond the control of the manufacturer or installer.

1.4 SUBMITTALS

Synthetic grass vendor must submit the following to owner or owner's representative with the official bid package:

- A. One (1) copy of the most recent installation reference list for projects of similar scope to this project completed in last five years.
- B. One (1) 12"x12" loose sample of proposed synthetic grass product.
- C. One (1) copy of the product warranty for proposed synthetic grass product.
- D. One (1) copy of their maintenance instructions. These instructions will include all necessary instructions for the proper care and maintenance of the newly installed synthetic turf system.
- E. One (1) copy of edge details (if requested) of proposed installation and terminations of synthetic grass system.
- F. One (1) copy (if requested) of independent laboratory test reports on system or components.
- G. Recommend drain requirements are reviewed and approved by plumber and local municipality where appropriate.

2 PRODUCTS

2.1 SYNTHETIC GRASS SYSTEM

- A. **Synthetic Grass:** ForeverLawn K9Grass Endura

PileWeight: 75 oz. /sy.

Face Yarn Type: Primary: Nylon monofilament; Secondary: Heat set textured nylon monofilament

Yarn Count: Primary 5000/8; Secondary: 4,730/8

Pile Height (knitted): 7/8"

Color: Primary: Field / Apple Green; Secondary: Green / Tan

Construction: Knitted

Antimicrobial Protection: Yes

Tufting Gauge: N/A – knitted product

Backing: Flow-through knitted backing

Seaming: Turf adhesive

Total Product Weight: 80 oz./sy.

Finished Roll Width: 15 ft. (4.6 m)

Finished Roll Length: Up to 150 ft. (45.72 m)

- I. The synthetic grass shall be delivered in 15-foot-wide rolls. The rolls will be laid out and installed as specified in the site layout and equipment placement drawings.
 - II. All seams shall be installed and secured with approved turf adhesive. Seams secured with stitching alone shall not be acceptable.
 - III. No infill material is to be used.
- B. Base and Attaching Components:
- I. Base is to be smooth, sloped, and sealed impermeable surface that directs liquid waste to an exit point (drain).
 - II. Perimeter framing prepared using plastic 1 1/4" x 2 1/2" plastic board that is typically secured to floor via 2"- 3" concrete anchors or glue where concrete anchors are not permitted.
 - III. Trench drain is recommended but center drain may be acceptable if approved by manufacturer's representative.
 - IV. Base is to be covered with grid elevation system that raises floor surface a minimum of 1" and reduces contact with the floor to allow liquids to drain vertically as well as flow to drain.
 - V. Base of grass area is typically 2" below the adjacent walking surface (1 3/8" for grid, 5/8" for grass, allowing top of blades to go beyond surrounding surface).
 - VI. Floor and wall connection is to be impermeable and it is advisable that walls are impermeable up to a minimum of 36".
 - VII. The patented "under grass flushing system" is to be incorporated that rinses the floor diluting urine and moving it to the drain without wetting the grass.
 - VIII. Any deviation from these methodologies must be approved by manufacturer. Turf is to be secured around all edges.
- C. HVAC: Indoor use of synthetic grass requires industrial strength dehumidification and potential use of equipment to dry and maintain the grass. An HVAC or dehumidification expert with specific expertise with synthetic grass use for indoor installations should be consulted.
- D. Alternative Base and Attaching Components: Indoor areas without a consistent sealed sloped surface may still be candidates for a synthetic grass solution but require specific manufacturer design involvement.

3 EXECUTION

3.1 BASE AND DRAINAGE CONSTRUCTION

The synthetic grass base contractor shall strictly adhere to the installation procedures outlined under this section and by the engineer's drawings. Any variance from these requirements must be accepted in writing, by the synthetic grass vendor, and submitted to the owner or owner's representative, verifying that the changes do not adversely affect the performance or warranty.

- A. Base Preparation: Floor should be a smooth consistent surface that is sealed and impermeable to liquids. Liquids must easily flow to drainage point.
- B. Plastic Nailer Board: The synthetic turf perimeter fastening structure shall be installed before the grid system.
 - I. Install a plastic board around perimeter and all penetrating objects. Nailer board shall be 1/2" below grade when adjacent to hard surface (i.e. concrete or tile). This shall be the responsibility of the synthetic turf base contractor. See synthetic turf edge attachment detail.
- C. A flushing system is recommended for installations over grid covering a sealed sloped surface. This system provides mechanisms required to move water and/or cleaning solution under the grass, diluting urine, and moving it to the drain (trench drain preferred).
- D. A flushing system is typically broken down into 15' zones of 1/2" piping with a center feed and emitter holes. If longer zones are required, consult manufacturer. Three basic flushing system options typically exist:
 - I. Manual System: Zone is fed by a stubbed pipe coming up through the grass with a male/female quick connect. Zones are fed by a hose connected to water source, manually connected, then turned on.
 - II. Semi-Automated: Zone is fed by a charged water line with a "hard connection" to each flushing system port. An easy to turn on and off valve is to be provided for each zone for ease of turning on and off.
 - III. Automated: Zone is fed by a hard line and controlled by a central control panel (similar to sprinkler system). Panel provides programming options. It is recommended that hard lines are considered in advance of pouring concrete. It is recommended to consult irrigation or plumbing expert on control panel preferences.
- E. Option for integrating cleaning solutions can be set up in water line coming in. It is advisable to provide easy switching between clean water and water infused with cleaning solution.
 - I. A back flow protection is typically required by certified plumber to prevent contamination of water source.
 - II. An infusion pump needs to be provided into the line providing the cleaning solution.
 - III. A tank containing cleaning concentrate needs to be connected to the infusion pump line.
 - IV. It is advisable that the flushing system be testing prior to installation of synthetic turf.
- F. For an alternate aggregate Base Drainage System: Must be approved for indoor use by manufacturer representative.

- I. Base Drainage Aggregate: Installation of the free draining base aggregate of three inches of a 3/4" to 1/2" washed and angular stone capped with 1" of 3/8" washed and angular stone is the preferred installation method. Each layer of stone should be compacted with a vibratory plate compactor multiple times. If a two layer stone base is not achievable, a full 4 inches of a 3/8" clean angular stone could be used as a secondary option. If the sub-base does not permit liquids to freely percolate, auxiliary drainage is required. Base material must be installed to a minimum depth of 3 1/2". See edge detail - indoor over stone and structure.
- II. The stone shall be left firm and compacted while allowing the porosity and drainage capabilities of the aggregate profile.
- III. The free draining base will likely require additional drainage components to evacuate liquids. Base must be installed to a minimum depth of 3 1/2" with an overall compaction rate of at least 90%.

3.2 SYNTHETIC GRASS SYSTEM INSTALLATION

After a final inspection of the base (stone or grid) and by the synthetic grass contractor and the owner's representative, the synthetic turf installation shall begin. The synthetic grass product shall be delivered in 15-foot-wide rolls.

- A. Synthetic grass rolls shall be joined via adhesive bond seaming and reinforced with specialty turf adhesive where necessary:
 - I. Seams shall be flat, tight, and permanent with no separation or fraying.
 - II. Grass rolls must be installed with pile leaning the same direction.
- B. Synthetic Turf Perimeter Attachment: After final layout and seaming of the synthetic grass product, the synthetic turf material shall at a minimum be secured to the plastic perimeter board. Plastic board is to be firmly anchored to floor, curb, or wall surrounding the synthetic turf area.
 - III. The turf shall be attached to plastic nailer board by stainless steel staples (staple process must be approved by manufacturer and is important to note, restricts future access under the grass), screws, and/or aluminum tack and cover strips.
 - IV. Concrete and solid surfaces should be 1/2" higher than the top of the perimeter board
- C. Infill Application: It is imperative that no infill is utilized with synthetic turf used with dogs.

3.3 CLOSEOUT

- A. The synthetic grass vendor must verify that a qualified representative has inspected the installation and that the finished surface conforms to the manufacturer's requirements.
- B. Extra Materials: Owner shall be given option to retain and store excess materials such as excess turf for project, but not installed.

3.4 CLEAN UP

- A. Contractor shall provide the labor, supplies, and equipment as necessary for final cleaning of surfaces and installed items.
- B. During the contract and at intervals as directed by the owner or owner's representative and as synthetic grass system installation is completed, clear the site of all extraneous materials, trash, or debris, and leave the site in a clean, safe, well-draining, neat condition.
- C. Surfaces, recesses, enclosures, etc. shall be cleaned as necessary to leave the work area clean and ready for immediate occupancy and use by the owner.