

Hingham Shipyard – The Beth Patio NOI

Conservation Commission

Additional Information for the Proposed Artificial Turf

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Section 1 - Introduction

At the May 4, 2026 Conservation Commission Hearing relative to the Notice of Intent for the proposed restaurant outdoor patio seating, both commission members and the conservation officer raised questions specific to the use of artificial turf as a permeable surface alternative vs other more widely used surfaces including permeable pavers.

The additional information provided in this package expands on why artificial turf should be considered a viable alternative and speaks to the following items raised at the May 4th hearing.

1. How permeable is artificial turf
2. Operation and maintenance requirements
3. Lifespan of artificial turf and by products of wear
4. Stormwater requirements/standards and provide effective infiltration

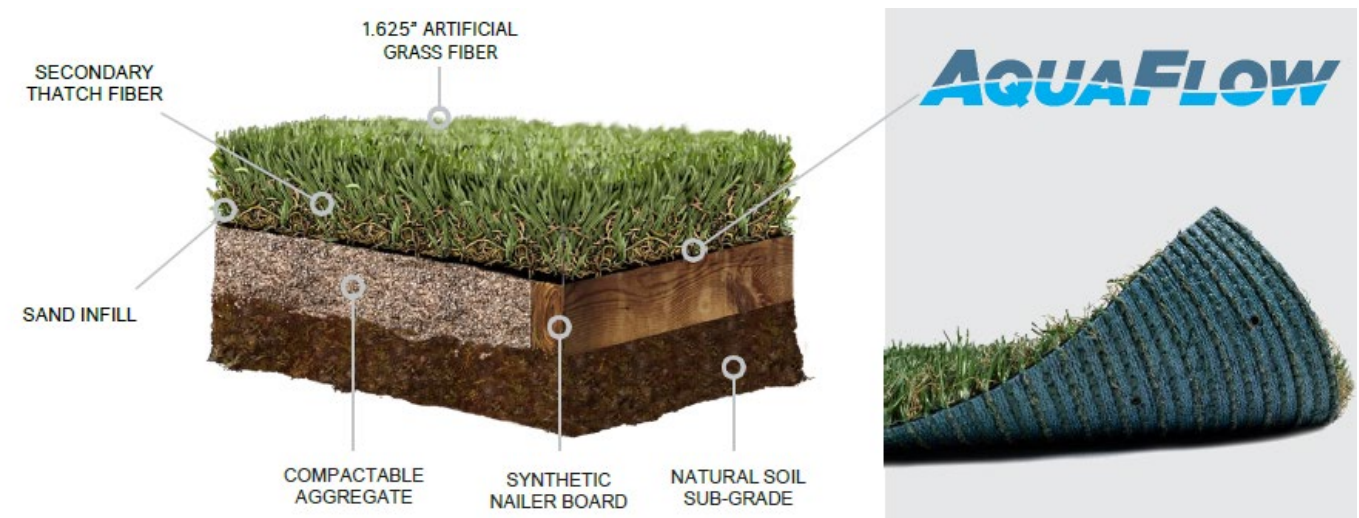
Based on the additional materials provided, the applicant's preference remains artificial turn from both an aesthetic/design standpoint and customer experience.

Section 2 – Comparison

Proposed Artificial Turf Material

Command Core Artificial Turf

- High performance turf system designed for rapid drainage
- Combination of artificial grass and thatch fiber with sand infill (no rubber)
- Porous backing with AquaFlow technology
- Layer of well draining aggregate base on top of naturally occurring soil
- **Water permeability 300 in/hr +**
- No watering or chemicals/fertilization
- Considered impervious by MassDEP
- Requires periodic cleaning and replacement between 8 – 10 yrs





FieldTurf[®]
COMMERCIAL
A Tarkett Sports Company



PROPERTY	VALUE	METHOD
Pile Height	1.625"	D5823
Pile Weight	65 OZ/YD2	D5848
Total Weight	91 OZ/YD2	D5848
Gauge	0.375"	D5793
Primary Backing Weight	8+ OZ/YD2	D5848
Pile Yarn Type	Mono/Thatch Combo	n/a
Primary Yarn Color	Field Green/Nutmeg & Olive	n/a
Primary Denier	19,000+	D1577
Secondary Yarn Structure	Slit Film	n/a
Secondary Yarn Color	Field Green	n/a
Secondary Denier	9,900+	D1577
Grab Tear Length	>275 LBS/Force	D5034
Grab Tear Width	>275 LBS/Force	D5034
Coating Weight	18 OZ/YD2	D5848
Coating Type	AquaFlow	n/a
Water Permeability	>300 IN/HR	DIN 18-035
Total Infill	2.5 - 3 LBS/FT2	n/a

* Variation of +/- 5% on above listed property values are within normal manufacturing tolerances.

COMMAND CORE



UNMATCHED
8 YEAR WARRANTY



PROUDLY
CRAFTED IN
THE USA



#1 DRAINAGE
IN THE INDUSTRY



ENVIRONMENTALLY
SUSTAINABLE





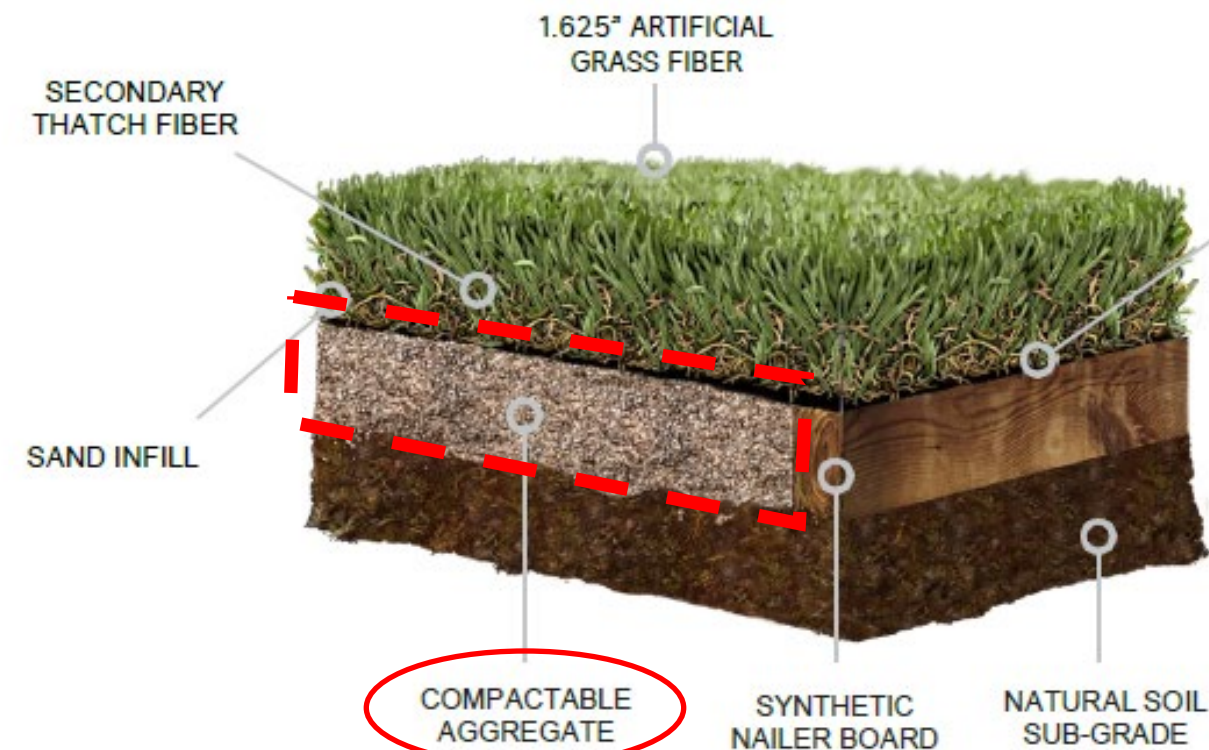
Fieldturfcommercial.com

Section 2 – Comparison

Proposed Artificial Turf Material

Base Material:

- Key component of the turf system is a well draining “compactable aggregate” base material
- The base material is located between the turf and underlying natural soil sub-grade
- The specified base material is commonly used for permeable pavers and projects/surfaces that require a stable and well draining base material
- The specified base material has a permeability rate that meets/exceeds the turf (>300 in/hr)
- Installation of the specified base material (and overall system) will be closely monitored/inspected to insure its completed per specifications



Compactable Aggregate:

- ASTM # 8 Stone
- Crushed aggregate, typically sized between 3/8" and 1/2"
- Easily compacted to create a stable base
- Washed stone to remove dust and fines

Section 2 – Comparison

Grass Lawn and Permeable Pavers

Grass Lawn

- Variable permeability based on soil conditions and maintenance program
- Well-maintained, healthy lawns can infiltrate at a rate of over 2 in/hr
- Typical range is 0.2 to over 2 in/hr depending on soil type
- Requires watering , chemicals/fertilization, aeration, etc.

Permeable Pavers

- Permeability of 500 in/hr +
- No watering or chemicals/fertilization
- Requires replacement of missing and/or damaged pavers
- Require maintenance of joints, cleaning and adding/replacing of joint material
- Considered pervious by MassDEP and accepted for stormwater management

Summary:

Item	Grass Lawn	Permeable Pavers	Artificial Turf
Permeability	0.2 to >2 in/hr	Varies, 500 in/hr +	300 in/hr +
Maintenance	Aerating, dethatching, watering and fertilizers	Regular inspections, replace worn/broken pavers, cleaning and adding/replacing joint material	Regular inspections, cleaning, and periodic replacement or replenishment of sand infill Requires turf replacement every 8-10 yrs
MassDEP	n/a	Considered Pervious and accepted for stormwater management	Considered Impervious from a groundwater recharge/infiltration perspective but applicant can demonstrate hydraulic connectivity with appropriate specified base material

Section 3 - Requirements to Address Concerns

Artificial turf is not considered permeable by Mass DEP, absent specific information regarding base material, compaction and O&M. The proposed artificial turf is a high-performance turf system that is permeable based on the specified underlying base material and will be subject to an O&M program to prevent clogging.

Please consider the when evaluating the use of artificial turf as part of the patio expansion:

1. The artificial turf and aggregate base combined will function as a permeable system that maintains a hydraulic connection to the underlying natural soil
2. The proposed artificial turf system is immediately adjacent to pervious planting beds and lawn
3. Installation will be monitored/inspected to ensure conformance with the specifications and installation details
4. An Operation & Maintenance plan will be implemented to ensure performance/permeability isn't compromised
5. The proposed artificial turf has a 8-10 yr lifespan and will be replaced as required
6. Although not yet viewed by MassDEP as a pervious surface, without further details, the turf being proposed is highly pervious and the aggregate base and natural soil subgrade should be considered a suitable material, subject to the appropriate Operation & Maintenance Plan

Section 4 - Conclusion/Overall Benefits

The proposed artificial turf by FieldTurf Commercial (Command Core) as proposed to be installed provides a suitable surface that provides a level of permeability as well as an ADA accessible surface which is important for the proposed use.

Overall benefits include no watering, no use of pesticides and no use of fertilizers.