This HydroTurf® Specification document has been prepared to provide the Owner, Design Engineer, Construction Quality Assurance Professional of Record, and the Contractor / Installer with a general guidance specification. All information, recommendations and suggestions appearing in this specification concerning the use of our products are based upon experience, tests and data believed to be reliable; however, this information should not be used or relied upon for any specific application without independent professional examination and verification of its accuracy, suitability and applicability. The independent professional shall edit this document to suit the site specific project design criteria. Since the actual use by others is beyond our control, no guarantee or warranty of any kind, expressed or implied, is made by Watershed Geosynthetics LLC as to the effects of such use or the results to be obtained, nor does Watershed Geosynthetics LLC assume any liability in connection herewith. Any statement made herein may not be absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. HydroTurf® product (US Patent Nos. 7,682,105, 8,585,322, and 9,163,375; Canadian Patent No. 2,663,170; and other Patents Pending) and trademark are the property of Watershed Geosynthetics LLC. Nothing herein is to be construed as permission to grant license or as a recommendation to infringe any patent.

Note to Author: This Specification should be edited in all places where it may be in conflict with other contract requirements. Specific areas of concern are highlighted throughout this document where site specific contract requirements may change. The engineer of record is responsible for ensuring this document conforms to all professional, contract and regulatory requirements. Please make any site specific changes, and then delete highlighted notes in the final issued specification.

SECTION 01 42 00

HYDROTURF® Z REFERENCES AND DEFINITIONS

PART 1: GENERAL

1.01 SUMMARY

A. Section Includes:

References and Definitions related to the HydroTurf® Z product.

1.02 RELATED SECTIONS

Select Appropriate Sections that Apply to Specific Project

Section 31 23 13 - Subgrade Preparation
Section xx xx xx - HydroTurf Z Engineered Turf Specification
Section 03 49 01 - HydroBinder® Infill
Section 03 05 59 - Penetrating Catalyzed Colloidal Silicate Concrete Treatment for HydroTurf
1.03 REFERENCES

A. Latest Version of American Society for Testing and Materials (ASTM) standards:

- ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar
- ASTM D1335 - Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
- ASTM D1577 - Standard Test Methods for Linear Density of Textile Fibers
- ASTM D1907 - Standard Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method
- ASTM D5321 - Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method
- ASTM D5793 - Standard Test Method for Binding Sites per Unit Length or Width of Pile Yarn Floor Coverings
- ASTM D5823 - Standard Test Method for Tuft Height of Pile Floor Coverings
- ASTM D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Coverings
- ASTM D6241 - Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe

B. American Concrete Institute (ACI) - 306R-10 Guide to Cold Weather Concreting

1.04 DEFINITIONS

A. Definitions as related to the HydroTurf Z Product and the Construction Quality Assurance (CQA) Plan definitions for the product. Whenever the terms listed below are used, the intent and meaning will be interpreted as
indicated.

**Acclimation**

Physiological/thermal adjustment. Required in the geomembrane and engineered turf deployment process.

**ASTM**

ASTM International, known until 2001 as the American Society for Testing and Materials, is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

**HydroTurf® Z**

HydroTurf Z is a composite engineered synthetic turf system. The engineered synthetic turf has a polyethylene extruded backing and is infilled with a cementitious mix (HydroBinder). It is used as a revetment system for lining channels, swales, outfalls, spillways, shorelines, and slopes in order to protect against erosion.

**Construction Quality Assurance (CQA)**

Construction Quality Assurance includes but is not limited to observations and documentation of materials and workmanship necessary to show that a particular project is being constructed according to site-specific specifications and within regulatory guidelines.

**Construction Quality Assurance (CQA) Personnel**

Construction Quality Assurance (CQA) personnel are representatives of the Professional of Record (POR) who work under direct supervision of the POR. The CQA personnel are responsible for quality assurance monitoring, applicable conformance sampling and performing onsite tests and observations.

**Construction Quality Assurance Professional of Record (POR)**

The POR is an authorized representative of the Owner and has overall responsibility for CQA efforts and to confirm the project was constructed in general accordance with site-specific specifications approved by the regulatory authority and contract documents. The POR must be licensed as a Professional Engineer in the State the project is located and experienced in geosynthetics.
**Construction Quality Control (CQC) Personnel**

CQC Personnel are representatives of the Geosynthetics Installer who work under direct supervision of the Geosynthetics Installer. The Geosynthetics Installers’ CQC Personnel are responsible for construction quality control, applicable conformance sampling and performing onsite tests and observations.

**Contract Documents**

Written, printed, or electronic matter that provides information or evidence that serves as an official record and are issued by the owner or operator. The documents include bidding requirements that include but are not limited to, contract forms, contract conditions, contract specifications, CQA plan, contract drawings, addenda, and contract modifications.

**Contract Specifications**

The requirements which are to be followed in the construction of the HydroTurf® System. The standard specifications, supplemental specifications, special provisions, and all written or printed agreements and instructions that pertain to the method and manner of performing the work.

**Contractor**

One that agrees to furnish materials or perform services at a specified price, especially for construction work.

**Design Engineer**

An individual licensed to practice as a Professional Engineer or a Professional Service Firm that is responsible for the preparation of the project construction drawings and specifications.

**Earthwork**

A general engineering term relating to the relocation and utilization of soil during the process of construction.

**Engineered Turf**

A component of the HydroTurf® System. A synthetic structured material consisting of one or more geotextiles tufted with polyethylene yarns that resemble grass blades.

**HydroBinder®**

A proprietary cementitious infill utilized as an infill where higher surface
water velocities may occur as well as in anchor trenches where specified.

**Geosynthetics Contractor / Installer**

The entity responsible for geosynthetic installation.

**Independent Testing Laboratory**

An organization, person, or company that tests products and materials, etc. according to agreed requirements. The entity shall be independent of ownership or control by the Owner or any party to the construction of the final cover or the manufacturer of the final cover products used. The entity shall also have proper legal authority where required to issue opinions and document the results of tests requested by the Owner.

**Installation Supervisor**

The person on-site who works for the Geosynthetics Installer and is in charge of the Geosynthetics Personnel and following the site specifications for the installation of the geosynthetics.

**Manufacturing Quality Control (MQC)**

A planned system of inspection and verification to ensure the quality of the final product.

**Nonconformance**

A deficiency in characteristics, documentation, or procedures that render the quality of an item or activity unacceptable or indeterminate. Examples of non-conformances include, but are not limited to, physical defects, test failures, and inadequate documentation.

**Operator**

The entity in control and responsible for the facility.

**Owner**

The entity that owns facility and land.

**Owner’s or Operators Representative**

An official representative of the Owner or Operator responsible for planning, organizing, and controlling construction activities.

**Panel**

A general reference to a unit area of HydroTurf product consisting of
engineered turf with a membrane backing.

**Quality Assurance**

A planned and systematic pattern of procedures and documentation to ensure that items of work or services meet the requirements of the contract documents.

**Quality Control**

These actions provide a means to measure and regulate the characteristics of an item or service to comply with the requirements of the contract documents.

**Representative Sample**

A random specimen of HydroTurf product obtained in the field during installation or from storage at the manufacturing plant.

**Ripple**

Smaller in nature than a wrinkle. A result of thermal/or manufacturing that cannot be folded over.

**Snapping**

A manual method to an open ended seam to remove tenting as a result of the welding of the geomembrane seams.

**Specimen**

(With respect to destructive testing) - A specimen is the individual test strip (sometimes called coupon) from a sample location. A sample location can consist of many specimens.

**Wrinkle**

A portion of the geomembrane that does not lay relatively flat and is not a result of subgrade irregularity and which can be folded over.

**PART 2: PRODUCTS:**

*Not Used.*

**PART 3: EXECUTION:**

*Not Used.*