



MATERIAL & DESIGN CORE SPECIFICATION - 2021

GENERAL SPECIFICATIONS

Proper use and construction of the PermaEdge Bunker System (referred to as “the System”) involves unique and specialized requirements that conform with patented and patent-pending processes. Beyond the simple concept of synthetic turf, the System employs the use of re-purposed synthetic turf that meets specific compositional, dimensional, preparatory, construction, and safety requirements. It is the precise steps and combination of these requirements that form the System. At its core, the System is a method of constructing a retaining wall from recycled, sand-impregnated synthetic turf; supplied as multi-dimensional tiles; site-prepared and built employing a stacked, alternating layer approach; additionally secured with a compacted, dry-mixed, Portland Modified Soil back fill.

Reference Typical PermaEdge Profile and Specification Notes

BASIC PHYSICAL

Material	Synthetic Sports Turf	
Condition	Used/Recycled	
Backing	Perforated SBR Latex	
In-Fill	Pre-Impregnated, Kiln-Dried Sand	
Bio-Mass	Safety Tested for International Trade	
	US	Metric
Size (approximate ±15%)	Anchor Tiles - 19.5 x 6.8 x .75 inches Fascia Tiles - 19.5 x 4.8 x .75 inches	Anchor Tiles - 500mm x 173mm x 20mm Fascia Tiles - 500 x 122mm x 20mm
Palletization - Face Area	69.4 sq ft	6.45 sq m
Palletization - Size	48 x 40 x 28 inches	1200mm x 1000mm x 711mm
Palletization - Weight	2500-2800 lbs	1134-1270 kg

CMS MODIFIED SOIL BACKFILL

Soil/Sand Source	Excavated & Reclaimed from Site Optional - Sourced	
Soil/Sand Composition	50/50 to 30/70 Ratio to 15/85 - Consult the Technical Advisor	
Portland Cement	Ordinary Portland Cement (Type II) AASHTO M85	
Portland Ratio to Soil Sand	5 to 10% by volume (19:1 to 19:2 soil/sand to OPC) varies by site conditions, wall height, and wall angle	
Portland Ratio to Face Area	3 lbs per sq ft face	1.5 kg per sq meter face
CMS Backfill to Face Area	.2 cu m per sq m face	.65 cu ft per sq ft face
Compacted CMS Backfill	2.5 inch maximum layer	60mm maximum layer
CMS Backfill Dry Density	90%	

BUNKER PREPARATIONS

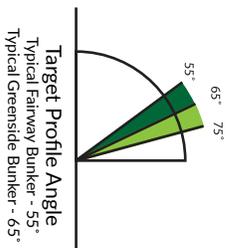
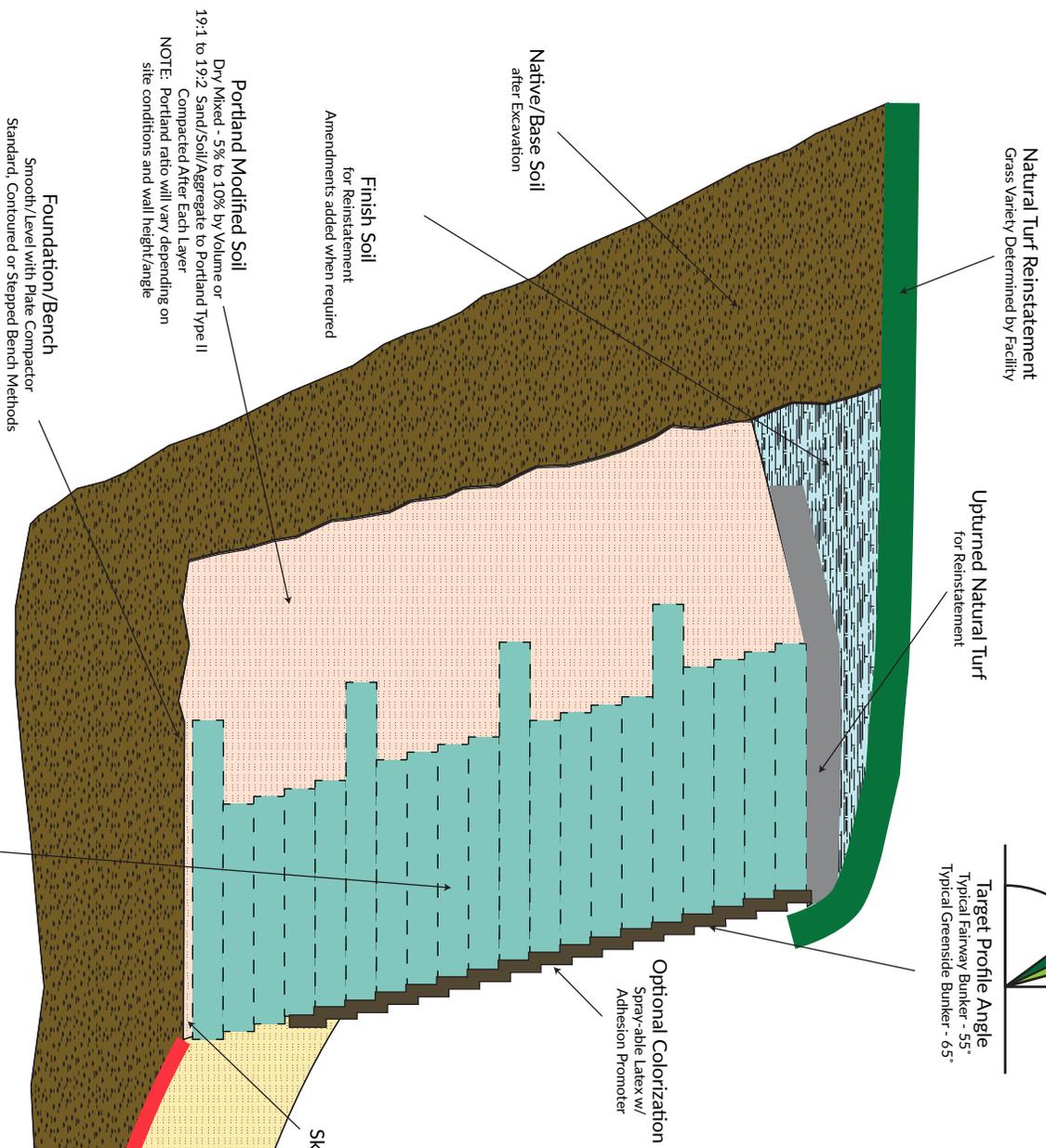
Excavation Prior to Arrival	To desired height and slope	
Preparation Prior to Arrival	Level, Compact Bench/Foundation	
Bench Size	12-14 inches	.3 to .36 meters

CONSTRUCTION

Tile Preparations	On-site, required, dimensional cuts as defined by bunker curvatures	
Build Method	1:4 ratio alternating Anchor/Fascia Tiles	
Slope Angle	Inclinometer Verified to Target Angle	
Backfill Compaction	Following each PermaEdge Layer	
Set-Back	Single, Double or Triple	

PermaEdge Design Specification

Typical PermaEdge Profile



Legend - Notes

-  **Base Soil / Excavated Soil**
Compacted Level Bench/Foundation w/ Angle of Excavated Slope Equal to Target Profile Slope Angle.
-  **PMS - Portland Modified Soil**
5% Type II Portland by Weight in a 1:1.9 Ratio w/ Sand/Soil/Aggregate, Compacted by Layer.
-  **Synthetic Turf Profile**
Alternating Layers of Anchor Tiles (500mm x 173mm) and Fascia Tiles (500mm x 122mm) to a 1:1.4 Ratio.
-  **Bunker Sand**
-  **Natural Turf Reinstatement**
Upturned layer of Natural Turf as Intermediate Layer Prior to Finish Soil and Final Turf Layer.
-  **Finish Soil - Natural Turf Reinstatement**
Topsoil as Appended to Include Wetting Agent for Improved Turf Establishment.
-  **Natural Turf Reinstatement**
Final Turf Layer - Placed to Overhang the Synthetic Turf Profile until Established, then Trimmed to Final Edge
-  **Optional - Bunker Liner**
For Additional Protection, a Fabric Liner such as Sandtrapper or alternative hardscap
-  **Optional - Colorization**
For Additional Protection or Customized Look in Select Colors. Comprised of a Latex Coating/Paint with Adhesion Promoter
-  **Skim/Bundling Layer of PMS**
0.25" (5mm) in Depth Smoothed & Compacted
-  **Bunker Sand Level**
Sand Spec Determined by Facility
-  **Optional Base Liner**
Sandtrapper or alternative

Portland Modified Soil
 Dry Mix'd - 5% to 10% by Volume or 19:1 to 19:2 Sand/Soil/Aggregate to Portland Type II
 Compacted After Each Layer
 NOTE: Portland ratio will vary depending on site conditions and wall height/angle

Finish Soil
 for Reinstatement
 Amendments added when required

Foundation/Bench
 Smooth/Level with Plate Compactor
 Standard, Contoured or Stepped Bench Methods

PermaEdge Bunker System Profile
 Anchor Tiles (6.8" x 20" x .75") & Fascia Tiles (6.45" x 20" x .75") in a 1:1.4 Alternating Placement
 Single, Double, or Triple Setback to Desired Target Profile Angle

Slope Profile
 Finished Profile Should Always Slope Away to Avoid Chance of Ball Coming to Rest Very Close to the Face