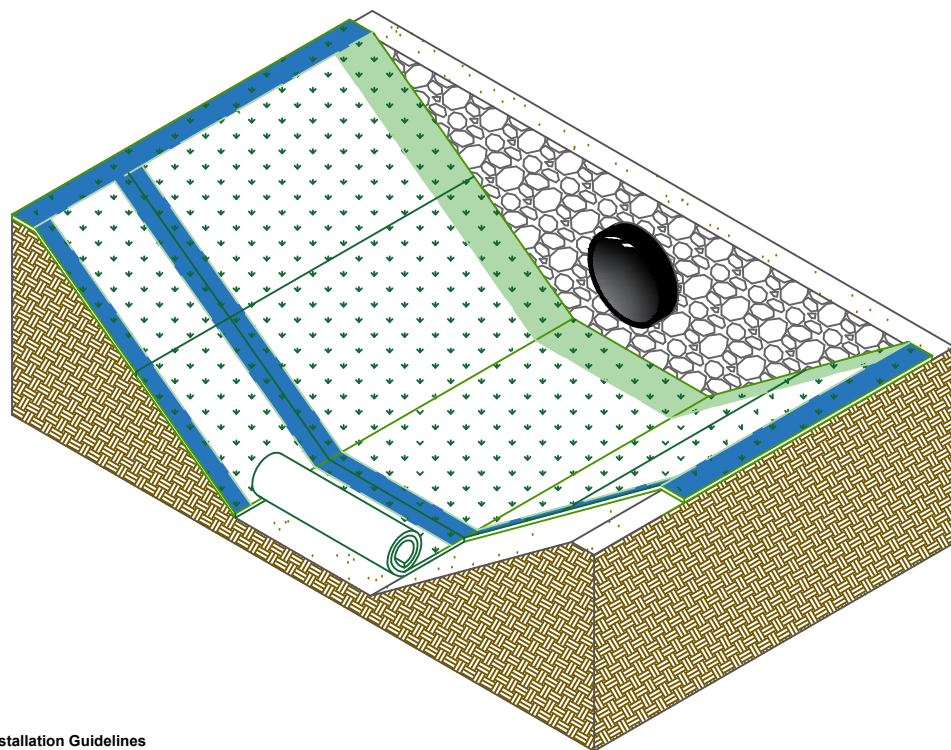
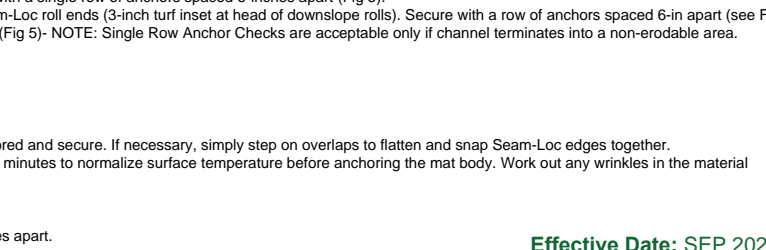
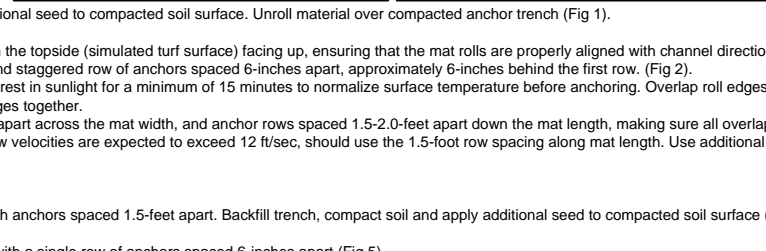
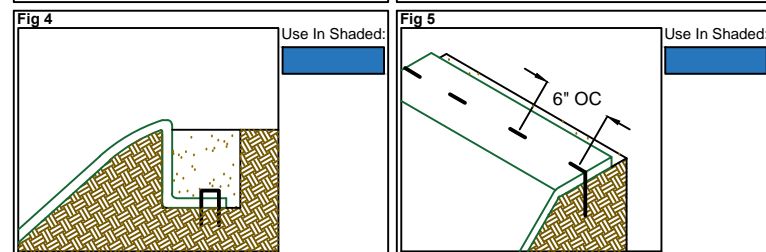
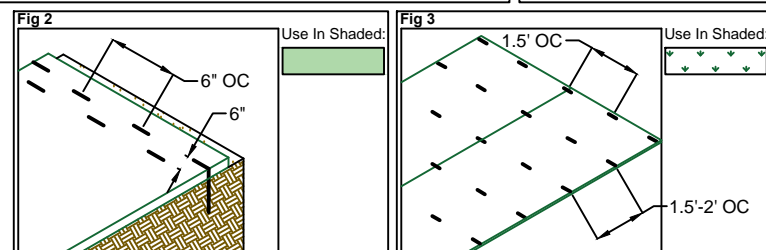
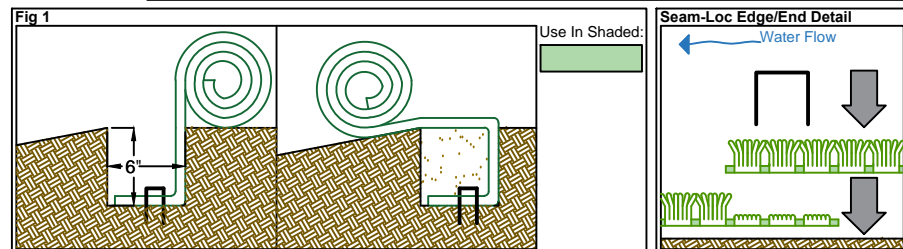


ShearForce10 Hybrid Turf Instant Armor Mat Installation Guide for Channels, Downchutes, and Spillways (Not To Scale)



ShearForce10 Recommended Anchors		
Soil Type	*Minimum Anchor	Alternate Anchors
Cohesive, well compacted or undisturbed	8"x2"x8" wire U-staple	12" Fabric Pin, 8" Plastic Stake
Cohesive, loose	12"x2"x12" wire U-staple	18" Fabric Pin, 12" Plastic Stake
Non-Cohesive, well compacted or undisturbed	12"x2"x12", 3/8" Rebar U-staple	24" Fabric Pin, 18" Earth Anchor
Non-Cohesive, loose	18"x2"x18", 3/8" Rebar U-staple	36" Percussion Earth Anchor

*U-shaped anchors are recommended as they can be shared between adjacent rolls when seaming, reducing total anchors needed during installation.



Installation Guidelines

- Select appropriate anchors for matting based on soil type and consistency (See Recommended Anchors Table).**
- Prepare seedbed,** create a smooth soil surface and eliminate any existing rills, soil clods, sticks or rocks larger than 2-inches in diameter. Any soil used to fill rills or low spots must be adequately compacted before seedbed preparation.
- Apply seed, fertilizer,** and other amendments at the specified rates, either by broadcasting, drilling, or hydro-seeding.
- Position and anchor leading edge of mats at in-flow end of channel** with one of the following acceptable methods:
 - 6-inch Covered Anchor Trench (Figure 1)**
Construct a 6-inch wide by 6-inch deep anchor trench across the top width of the channel. Position the leading edge of the mats in the bottom of the trench, with the topside (simulated turf surface) facing down. Make sure mat rolls are properly aligned with channel direction. Position any adjacent rolls according to Step 5 (to ensure proper overlap), and anchor leading edges of all mats into bottom of trench on 1-foot centers. Backfill trench, compact soil and apply additional seed to compacted soil surface. Unroll material over compacted anchor trench (Fig 1).
 - Double Row Anchor Check (Figure 2)**
Where trenching is not practical or desired, an anchor check may be used to secure the leading edges of the mats. Position the leading edges of the mats with the topside (simulated turf surface) facing up, ensuring that the mat rolls are properly aligned with channel direction. Position adjacent rolls according to Step 5 (to ensure proper overlap). Secure leading edges of mats with a row of anchors spaced 6-inches apart, with a second staggered row of anchors spaced 6-inches apart, approximately 6-inches behind the first row. (Fig 2).
- Seam adjacent rolls. (Seam-Loc Edge Detail).** Unroll material down channel grade, slightly stretch and relax each mat to remove any wrinkles. Let unrolled mats rest in sunlight for a minimum of 15 minutes to normalize surface temperature before anchoring. Overlap roll edges by placing full-turf roll edges on top of nubbed Seam-Loc edges (2-inch inset) of adjacent rolls. If necessary, simply step on overlaps to flatten and snap Seam-Loc edges together.
- Anchor mats to soil. (Figure 3).** Starting at the in-flow end of channel and working down the channel gradient, fasten mats with a row of anchors spaced 1.5-feet apart across the mat width, and anchor rows spaced 1.5-2.0-feet apart down the mat length, making sure all overlaps and factory pre-fabricated seams (6-ft wide rolls only) are secured, according to Fig. 3. Installation on non-cohesive sandy soils and/or in channels where immediate flow velocities are expected to exceed 12 ft/sec, should use the 1.5-foot row spacing along mat length. Use additional anchors as necessary to smooth any remaining wrinkles and ensure that mats are in intimate contact with the underlying soil surface.
- Anchor mat edges at top of side-slopes** with one of two acceptable methods:
 - 6-inch Anchor Trench (Figure 4)**
Construct a 6-inch wide by 6-inch deep anchor trench at the top or over the crest of each side-slope and fasten the full length edge of mats into the bottom, with anchors spaced 1.5-feet apart. Backfill trench, compact soil and apply additional seed to compacted soil surface (Fig 4).
 - Single Row Anchor Check (Figure 5)**
Where trenching is not practical or desired, an anchor check may be used alternatively to secure the side-slope mat edges. Anchor side-slope edges of mats with a single row of anchors spaced 6-inches apart (Fig 5).
- Seaming consecutive roll ends. (Seam-Loc End Detail),** Overlap roll ends "shingle-style" by placing full-turf roll ends (tail of upslope rolls) on top of nubbed Seam-Loc roll ends (3-inch turf inset at head of downslope rolls). Secure with a row of anchors spaced 6-in apart (see Figure 5).
- Terminal channel roll ends.** Anchor roll ends at the terminal outfall of channel by constructing a 6-inch Anchor Trench (Fig 4) or with a Single Row Anchor Check (Fig 5)- NOTE: Single Row Anchor Checks are acceptable only if channel terminates into a non-erodible area.

Additional Tips for Fast & Effective Installation

- Install mat with simulated turf on top and fabric backing against soil surface.
- For best vegetative results, do not install on top of any additional erosion control blanket, TRM, or fabric.
- Overlap adjacent rolls by placing full-turf roll edges on top of nubbed Seam-Loc roll edges (2-inch turf inset). Ensure that all overlaps and seams are properly anchored and secure. If necessary, simply step on overlaps to flatten and snap Seam-Loc edges together.
- Continuous fabric contact with the underlying soil surface is very important for effective product performance. Unroll mat and let rest in sunlight for a minimum of 15 minutes to normalize surface temperature before anchoring the mat body. Work out any wrinkles in the material before anchoring. If wrinkles remain, additional anchors may be necessary to ensure good fabric-to-soil contact.
- In channel bends or reaches that are not straight, miter cut roll joints to prevent wrinkles in material.
- Use a heavy-duty utility knife or commercial-grade shears to cut material as necessary.
- When seaming cut roll ends or edges, DO NOT OVERLAP. Simply butt together cut ends or edges and seam together with a single row of anchors, spaced 6-inches apart.

Effective Date: SEP 2020



Bowman
Construction
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Cascade
GEOSYNTHETICS

LOCATIONS & CONTACT INFO

ASP ENTERPRISES

aspent.com
salesasp@aspent.com

BOWMAN CONSTRUCTION SUPPLY

bowmanconstructionsupply.com
salesbcs@bowmanconstructionsupply.com

QUICK SUPPLY CO.

quicksupplyco.com
salesquick@quicksupplyco.com

CASCADE GEOSYNTHETICS

cascadegeos.com
salescascade@cascadegeos.com

St. Louis, MO 636.343.4357
Omaha, NE 402.861.8579
Kansas City, MO 816.554.1191
Wichita, KS 316.393.1554

Denver, CO 303.696.8960
Colorado Springs, CO 719.257.7840
Loveland, CO 970.535.0863

Des Moines, IA
515.289.1271

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SEDIMENT CONTROL

Inlet Protection

- Grated Inlet, Curb Inlet, Area Inlet Protection

Ditch Checks

- Triangle Silt Dike
- GeoRidge

Perimeter Protection

- High and Low-Porosity Silt Fence, Straw Wattles, Silt Socks
- Safety Fence

Flocculants & Water Treatment

- Polymer-Based & Natural Flocculants

Sediment Basin Skimmers

Dewatering Bags

Trackout Control

- FODS
- Rumble Grates

Turbidity Curtains

EROSION CONTROL

Basic Hydraulically Applied Mulches

- Wood
- Paper
- Blends
- Straw

High-Performance Hydraulically

Applied Products

- BFM
- FGM
- Additives & Tackifiers

Temporary Erosion Control Blankets

- Coir & Jute Mat/Nettings
- Short-Term ECBs
- Extended-Term ECBs

Permanent Erosion Control Blankets

- Turf Reinforcement Mats
- HP-TRMs
- Anchor Reinforced Vegetation System

Structural BMPs

- Transition Mats
- Geoweb Cellular Confinement
- Composite Vegetated Armor System
- Flex MSE Vegetated Wall System
- Articulated Concrete Block
- Gabions
- Grout-Filled Geotextile Mats

Vegetation Establishment

- Native Seed & Turf Seed
- Fertilizers
- Organic Soil Additives
- Stratavault Soil Cells

STORMWATER MANAGEMENT

Water Quality

- Inlet Filter Boxes
- Pre-Treatment Chamber
- Nutrient Separating Baffle Boxes
- High-Flow Biofiltration Media
- Hydrodynamic Separators
- Stratavault

Water Quantity

- Modular Underground Storage Systems
- Chamber Detention Systems

Drainage

- HDPE Swale Liner
- Pipe & Fittings
- Drainage Composites
- Strip Drain

Inlet Structures

- PVC
- Drain Basins, In-Line Drains
- Landscape

Permeable Pavers

- Permeable Articulating Concrete Block
- Grass Pavers
- Gravel Pavers
- Concrete Pavers

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