Perimeter Sediment Control– alternative to silt fence
Sediment Control
GUIDE SPECIFICATION

PRODUCT:
S-Fence™

MANUFACTURER:
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1.0 Description:

S-Fence™ is an "I" shaped Sediment Control Device for non-traffic areas with concentrated flows shall conform to the details shown on the plans and these special provisions and shall be installed around the perimeter of areas with disturbed soil. The intended function of the Sediment Control Device is to disperse or spread concentrated water runoff, to reduce runoff velocities and minimize the off-site flow of sediment.

2.0 Material:

Sediment Control Device for non-traffic perimeters. Provide, sediment control device as shown on the plans.

A. **Size.** Furnish "I" shaped sediment control device with a height of 8 inches, 10 inches, 14 inches, 20 inches or as shown on the plans (12" is available for mating to E-Fence™ Wildlife Exclusion Fence). Each segment shall be 7 feet long and have minimum vertical freeboard of at least 5", 10" or 14" or 20" (7" or 11" or 20" installed) and is installed around construction sites with disturbed soil or at the base of slopes.

B. **Apparent Opening Size.** Sediment Control System shall contain a filter fabric such that the average AOS is approximately 250 microns. The Percentage Open Area should be greater than 20%.

C. **Structure.** Furnish Sediment Control Device manufactured from recycled content (minimum 50% HDPE) non-biodegradable materials which are UV Stable for at least 4 years. The system shall comprise semi-rigid, overlapping layers of thermally extruded, apertured polymeric high density polyethylene (HDPE) sheets, and one or more integrated filter sheets. The system shall be durable, such that it can be used for many subsequent jobs. The Sediment Control System shall have an integrated filter fabric. The system shall be recyclable at the end of life. The system shall also conform to the following:

Specification	Requirements
Height, inches, min.	8/ 10 / 14 / 20
Height, inches, min. (installation as E-Fence Sediment Control Barrier)	12
Mass per Unit Weight, (pounds/foot) (maximum – wet or dry)	0.28 / 0.35 / 0.48 / 0.69
Tensile Yield ASTM D-638 (lb/in2)	1800 - 2800
Ultimate Tensile Strength: ASTM D-638 (lb/in2)	2000 - 2800

Specification	Requirements
Filter Average Opening Size (AOS) (ASTM D 4751) , microns	250
Ultraviolet stability (outer jacket & filter), percent tensile strength retained after 500 hours, min. ASTM Designation: D 4355	95
Caltrans protocol - San Diego State University SERL soil retention test – 3 consecutive 10 yr storms	81%
Life in application (years - minimum)	4+
Recycled Material Content (minimum)	92%
Recyclable at end of Life (zero waste)	100%

* or appropriate test method for specific polymer

D. **Product Sheet & Installation Instructions.** A copy of the manufacturer's product sheet together with instructions for installation shall be furnished to the Engineer 5 days before installation.

E. **Stakes.** Installations shall use
1) wood stakes or
2) #3 or #4 rebar j-hooks
on the downstream side for reinforcement against high flows.

- For 8", 10" or 14" height, wood stakes shall be 1" x 2" x 18" (one stake at per 7' segment at the overlaps). Rebar j-hooks shall be 18" long.
- For 20" S-Fence™, wood stakes shall be 1"x2"x36" (two stakes per 7' segment. One at overlap and one in middle of segment).
- For 12" S-Fence™ refer to E-Fence™ installation instructions.

Wood stakes shall be untreated fir, redwood, cedar, or pine and cut from sound timber. They shall be straight and free of loose or unsound knots and other defects which would render them unfit for the purpose intended. Rebar j-hooks or metal stakes should be used for installations lasting longer than 2 years. Install stakes to within 2" from the top of S-Fence. More stakes as necessary in heavy flow areas.

3.0 Installation:
Sediment control filter system shall be installed as follows:

A. A trench or slot shall be excavated at the downstream perimeter of the site or at elevation contours to a depth of at least 3 inches (SF8, SF10, SF14) or at least 4" (SF20) and at least 2 inches wide. The trench shall be cleared of obstructions including, but not limited to, rocks, clods, and debris greater than 1-inch in any dimension.
B. Install stakes on downstream side, adjacent to trench.
C. Insert Sediment Control Device into slot against the downstream wall of trench – then backfill remaining volume with native soil.
D. Overlap segments by at least 3 inches.
E. Stakes shall be driven 2 inches below the top of the Sediment Control System. Fasten the segments together and to each stake with two or three 1" drywall screws or 16 gauge galvanized wire ties.
F. The ends of S-Fence™ shall be dog-legged or angled up-slope to ensure water and sediment containment.
G. S-Fence™ shall be installed before the application of other erosion control or soil stabilization materials in the same area.

The intended function of the S-Fence™ is to disperse or spread concentrated water runoff, to reduce runoff velocities and to capture a very high percentage of flowing sediment. If impaired, the Contractor shall take action to repair the S-Fence™. Split or torn segments shall be repaired or replaced. Broken or split stakes shall be replaced. Locations where rills and other evidence of concentrated runoff have occurred beneath the segments shall be corrected. S-Fence™ shall be repaired or replaced within 24 hours of identifying the deficiency.

4.0 Maintenance:

Perform maintenance as required. Inspect following rainfall events and at least daily during prolonged rainfall. Maintain to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches half the vertical height. Removed sediment shall be incorporated in the project at designated locations or disposed-of outside the project or in conformance with requirements. Damage to Sediment Control System resulting from the Contractor's vehicles, equipment, or operations shall be repaired at the contractor's expense.

Split or torn segments shall be repaired with zip-ties, 16 gauge galvanized wire or replaced. Deformed segments shall be reshaped. Locations where rills and other evidence of concentrated runoff have occurred beneath the Sediment Control System shall be corrected. Segments needing repair shall be repaired or replaced within 24 hours of identifying the deficiency.

5.0 Method of Measurement:

Quantities of Sediment Control System to be paid for will be determined by the linear foot measured along the centerline of the installed strip. Where Sediment Control System segments are joined and overlapped, the overlap will be measured as a single installed strip.

6.0 Basis of payment:

The contract price paid per linear foot for Sediment Control System shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing the Sediment Control System, complete in place, including trench/slot excavation and backfill, and maintenance, as shown on the plans, and in these special provisions, and as directed by the Engineer.