

**ITEM NO. 642S  
SILT FENCE**

**642S.1 Description**

This item shall govern the provision and placement of a silt fence fabric fence (Environmental Criteria Manual Section 1.4.5.G) including maintenance of the fence, removal of accumulated silt, removal of the silt fence and re-vegetation of disturbed areas upon completion of the project.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text, the inch-pound units are given preference followed by SI units shown within parentheses.

**642S.2 Submittals**

The submittal requirements for this specification item shall include:

- A. Source, manufacturer, characteristics and test data for the silt fence fabric,
- B. Manufacturer, characteristics and test data for the posts and wire fence.
- C. Re-vegetation program, including:
  - 1. Identification of the type, source, mixture, Pure Live Seed (PLS) and rate of application of the seeding.
  - 2. Type of mulch.
  - 3. Type of tacking agent.
  - 4. Type and rate of application of fertilizer.

**642S.3 Materials**

- A. Fabric
  - 1. General:

The silt fence fabric shall be of nonwoven polypropylene, polyethylene or polyamide thermoplastic fibers with non-raveling edges. The silt fence fabric shall be non-biodegradable, inert to most soil chemicals, ultraviolet resistant, unaffected by moisture or other weather conditions, and permeable to water while retaining sediment. The silt fence fabric shall be supplied in rolls a minimum of 36 inches (0.9 meter) wide.
  - 2. Physical Requirements:

The fabric shall meet the requirements presented in Table 1, when sampled and tested in accordance with the methods indicated herein, on Standard Detail No. 642S-1 and/or on the Drawings.

B. Posts:

Posts shall be steel Tee or Y-posts, not less than 4 feet (1.22 meters) in length with a minimum weight of 1.25 pounds per foot (1.86 kilograms per meter) with a minimum Brinell Hardness of 143. Hangers shall be adequate to secure fence and fabric to posts. Posts and anchor plates shall conform to ASTM A-702. Caps are required (\*not specifying discretionary criteria).

C. Wire Fence:

Wire fence shall be welded wire fabric 2 in. x 4 in. 12.5 SWG, wire diameter 0.099 in (±0.005 in.), and shall conform to Standard Specification Item No. 406, "Reinforcing Steel".

TABLE 1. Silt Fence Fabric Requirements		
Physical Properties	Method	Requirements
Fabric Weight in ounces per square yard (grams/square meter)	TEX-616-J <sup>1</sup>	5.0 minimum (150 minimum)
Equivalent Sieve Opening Size: US Standard (SI Standard sieve size)	CW-02215 <sup>2</sup>	40 to 100 (425 to 150 $\mu$ m)
Mullen Burst Strength: lbs. per sq. inch (psi) megaPascal (mPa)	ASTM D-3786 <sup>3</sup>	280 minimum (1.9 minimum)
Ultraviolet Resistance; % Strength Retention	ASTM D-1682 <sup>4</sup>	70 minimum

- <sup>1</sup> TxDoT Test Method Tex-616-J, "Testing of Construction Fabrics".
- <sup>2</sup> US Army Corps of Engineers Civil Works Construction Guide Specification CW-02215, "Plastic Filter Fabric".
- <sup>3</sup> ASTM D-3786, " Test Method for Hydraulic Bursting Strength of Knitting Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method".
- <sup>4</sup> ASTM D-1682, " Test Methods for Breaking Load and Elongation of Textile Fabrics ".

**642S.4 Construction Methods**

The silt fence fabric shall be securely attached to the posts and the wire support fence with the bottom 12 inches (300 mm) of the material buried in a trench a minimum of 6 inches (150 mm) deep and 6 inches (150 mm) wide to prevent sediment from passing under the fence. When the silt fence is constructed on impervious material, a 12-inch (300-mm) flap of fabric shall be extended upstream from the bottom of the silt fence and weighted to limit particulate loss. No horizontal joints will be allowed in the silt fence fabric. Vertical joints shall be overlapped a minimum of 12 inches (300 mm) with the ends sewn or otherwise securely tied.

The silt fence shall be a minimum of 24 inches (0.6 meter) high. Posts shall be embedded a minimum of 12 inches (300 mm) in the ground, placed a maximum of 8 feet (2.4 meters) apart and set on a slight angle toward the anticipated runoff source. When

directed by the Engineer or designated representative, posts shall be set at specified intervals to support concentrated loads.

\* Per OSHA §1926.701, 'all protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement'. Caps must be large enough to dissipate the forces of impact to prevent impalement from a reasonably foreseeable fall distance. It should be noted that the use of impalement protection caps is but one method of protection; covers or wooden troughs can be another means of meeting the guarding requirement. For City of Austin purposes, this also applies to t-posts and wooden stakes.

The silt fence shall be repaired, replaced, and/or relocated when necessary or as directed by the Engineer or designated representative. Accumulated silt shall be removed when it reaches a depth of 6 inches (150 mm).

### **642S. 5 Measurement**

The work performed and the materials furnished under this item will be measured by the lineal foot of "Silt Fence", complete in place.

### **642S.6 Payment**

The work performed and materials furnished and measured as provided under "Measurement" will be paid for at the unit bid price per lineal foot of "Silt Fence". The price shall include full compensation for furnishing, hauling and placing all materials, labor, tools, equipment and incidentals necessary to complete the work including inspecting, repairing, replacing and relocating the fence, removal of silt and removal and disposal of all materials at the completion of construction in and re-vegetation of disturbed areas.

Payment will be made under:

<b>Pay Item No. 642S:</b>	Silt Fence for Erosion Control	Per Lineal Foot.
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**END**

<b>SPECIFIC CROSS REFERENCE MATERIALS</b>
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Specification 642S, "Silt Fence"
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City of Austin Environmental Criteria Manual

<u>Designation</u>	<u>Description</u>
Section 1.4.5.G	Silt Fence

City of Austin Standard Details

<u>Designation</u>	<u>Description</u>
Number 642S-1	Silt Fence

City of Austin Technical Specifications

<u>Designation</u>	<u>Description</u>
Item No. 406	Reinforcing Steel

American Society For Testing and Materials (ASTM)

<u>Designation</u>	<u>Description</u>
A-702	Specification for Steel Fence Posts and Assemblies, Hot Wrought
D-1682	Test Methods for Breaking Load and Elongation of Textile Fabrics
D-3786	Test Method for Hydraulic Bursting Strength of Knitting Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method

Texas Department of Transportation Manual of Testing Procedures

<u>Designation</u>	<u>Description</u>
Tex-616-J	Testing of Construction Fabrics

U.S. Army Corps of Engineers

<u>Designation</u>	<u>Description</u>
CW-02215	Civil Works Construction Guide Specification "Plastic Filter Fabric"

<b>RELATED CROSS REFERENCE MATERIALS</b>
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Specification 642S, "Silt Fence"
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City of Austin Environmental Criteria Manual

<u>Designation</u>	<u>Description</u>
Table 1-1.3	Recommended Design Values For Functional Controls
Table 1-2	Maximum Water Depth At The Barrier

City of Austin Standard Specifications

<u>Designation</u>	<u>Description</u>
Item No. 101S	Preparing Right of Way
Item No. 102S	Clearing and Grubbing
Item No. 111S	Excavation
Item No. 120S	Channel Excavation
Item No. 401S	Structural Excavation and Backfill
Item No. 610S	Preservation of Trees and Other Vegetation