

SECTION 02714 - FILTER CLOTH

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, material, tools, and equipment necessary for furnishing and installing filter cloth in accordance with the Drawings and Standard Details, or as directed by the ENGINEER.

PART 2 - PRODUCTS

2.1 CLOTH

- A. Filter cloth shall be composed of plastic yarn fabricated into a pervious sheet with distinct pores or openings.
- B. The plastic yarn shall consist of a long-chain synthetic polymer composed of at least 85% by weight of propylene, ethylene, or vinylidene-chloride and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultraviolet and heat exposure. The cloth shall be calendared or otherwise finished so that the yarns will retain their relative position with respect to each other. The edges of the cloth shall be selvaged or otherwise finished to prevent the outer yarn from pulling away from the cloth.

- C. Type A filter cloth, woven or non-woven, shall meet the following requirements:

Grab Tensile Strength (ASTM D 1682)	90 lbs. min.
Bursting Strength (ASTM D 751)	100 psi min.
Equivalent Opening Size (EOS)	40 minimum, 100 maximum

- D. Type B filter cloth, woven or non-woven, shall meet the following requirements:

Grab Tensile Strength (ASTM D 1682)	200 lbs. min.
Bursting Strength (ASTM D 751)	500 psi min.

- E. Type C filter cloth, woven or non-woven, shall meet the following requirements:

Grab Tensile Strength (ASTM D 1682)	200 lbs. min.
Grab Tensile Elongation (ASTM D 1682)	30% maximum
Bursting Strength (ASTM D 751)	290 psi min.
Trapezoid Tear Strength (ASTM D 1117)	50 lbs. min.
Puncture Strength (ASTM D 751)*	75 lbs. min.
Water Permeability (AASHTO M 288)**	0.001 cm/sec. min.

*Using 5/16" flat-tipped pod

**5 cm. Constant head

2.2 SEAMS

- A. Seams, when required, shall be sewn with thread of material meeting the chemical requirements given above for plastic yarn. The sheets for filter cloth shall be sewn

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together at the factory or another approved location to form sections not less than two feet wide. Seams shall be tested in accordance with ASTM D 1682, using one inch square jaws and 12 inches per minute constant rate of traverse. The strengths shall be not less than 90 pounds in any principal direction.

2.3 ACCEPTANCE REQUIREMENTS

- A. All brands of plastic filter cloth and all seams to be used will be accepted on the basis of a certification. The CONTRACTOR shall furnish the ENGINEER a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the cloth. The mill certificate or affidavit shall attest that the cloth meets the chemical, physical, and manufacturing requirements stated in this Section.

2.4 SHIPMENT AND STORAGE

- A. During all periods of shipment and storage, the cloth shall be protected from direct sunlight, ultraviolet rays, temperatures greater than 140° F, mud, dirt, dust, and debris. To the extent possible, the cloth shall be wrapped in a heavy-duty protective covering.

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. Filter cloth shall be placed in the manner and at the locations shown on the Drawings or as directed by the ENGINEER. At the time of installation, cloth shall be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.
- B. The surface upon which the filter cloth is to be placed shall be free of projections or depressions, and rocks, roots, and other sharp objects which may cause the filter cloth to be punctured. The filter cloth shall be placed without stretching and shall lie smoothly in contact with the soil or wall surface. When overlapping of strips is necessary, the joints shall be overlapped a minimum of two feet. End overlaps shall be made in the direction of flow.
- C. The cloth shall be protected at all times during construction from contamination or from damage during its installation or during placement of subsequent covering; contaminated or damaged cloth shall be replaced at the CONTRACTOR's expense, or if the ENGINEER permits, torn fabric may be patched. The aggregate material shall be cleaned from the fabric, and the torn area shall be overlain with fabric with a minimum three foot overlap around the edges of the torn area. Care shall be taken that the patch remains in place when material is placed over the affected area.
- D. The WORK shall be scheduled so that not more than 30 Days elapse between the placement of the cloth and the time it is covered with specified material.
- E. Type A filter cloth shall be utilized in all installations except under riprap or gabions, or for subgrade reinforcement.
- F. Type B filter cloth shall be utilized under riprap or gabions.

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- G. Type C filter cloth shall be utilized for subgrade reinforcement.
- H. Following placement of the fabric on the prepared surface, material of the type shown on the Drawings shall be back-dumped on the previously spread fabric or ground adjacent to the fabric and carefully pushed or spread onto the fabric by a dozer or other machinery. A minimum depth of one foot, or the depth shown on the Drawings, shall be maintained at all times between the fabric and the wheels or tracks of the construction equipment. At no time shall equipment operate on the unprotected fabric. The material shall be spread in the direction of the fabric overlap. Special care shall be taken to maintain a proper overlap and fabric continuity.

END OF SECTION