206-R-719 DEWATERING

(Adopted 05-21-20)

Description

The Contractor shall design, furnish, install, test, operate, monitor, and maintain a dewatering system of sufficient scope, size, and capacity to prevent groundwater flow into excavations and allow water and construction operations to proceed on dry, stable subgrades.

Materials

Materials shall be in accordance with the following requirements.

Sediment filter bags shall consist of nonwoven, needle punched polypropylene geotextile consisting of strong, rot resistant, chemically stable long-chain synthetic polymer materials which are dimensionally stable relative to each other including the selvedges. The plastic yarn or fibers used in the geotextile shall consist of at least 85% by weight of polyolefins, polyesters, or polyamides. The plastic yarn or fibers shall have stabilizers and inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultraviolet and heat exposure.

The geotextile shall be in accordance with the physical requirements as follows:

PROPERTY	TEST METHOD	REQUIREMENTS*
Tensile Strength	Grab Tensile Strength, ASTM D 4632	200 lb
Elongation	Grab Tensile Strength, ASTM D 4632	15%
Mullen Burst	ASTM D 3786	350 psi
Seam Strength	Grab Tensile Strength, ASTM D 4632	180 lb
Puncture Strength	ASTM D 4833	110 lb
Trapezoid Tear	ASTM C 4533	80 lb
Ultraviolet Degradation at 150 h	ASTM D 4355	70% strength retained
Apparent Opening Size, AOS	ASTM D 4751	No. 80 standard sieve or filter
Flow Rate	ASTM D 4491	80 gal./min/sq ft
* The value in the weaker principal direction shall be used. All numerical values represent minimum average roll value and test results from any sampled roll in a lot shall meet or exceed the minimum values in the table. Lots shall be sampled according to ASTM D 4354.		

The size of the filter bag shall be appropriate for the site conditions.

Construction Requirements

Dewatering operations shall be maintained to ensure stability of excavations and constructed slopes and that the excavation does not flood. Surface water shall be prevented from entering excavations by grading, dikes, or other means. Water from work area dewatering pumps shall be discharged through a sediment filter bag, or other approved device. The filter bag shall be located such that discharge water flows back into a stabilized area downstream of the work area. Dewatering shall be accomplished without damaging existing buildings or structures adjacent to excavation. The dewatering system shall be removed when no longer needed.

The Contractor shall comply with water disposal requirements of authorities having jurisdiction.

The operation of the dewatering pumps and the condition and efficiency of the sediment filter bags shall be closely monitored. Sediment filter bags which do not perform properly or reach their capacity shall be replaced immediately.

The Contractor shall dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Disposal of water shall not inconvenience others. Sumps, sedimentation tanks, flow-control devices, and temporary sediment and erosion control shall be provided in accordance with 205 and as required by authorities having jurisdiction. Sediment in filter bags shall be removed once it has accumulated to the design volume and be disposed of in accordance with 202.

Method of Measurement

Dewatering will not be measured, regardless of how many times the system is moved, replaced or relocated. Sediment filter bags will not be measured regardless of the number of times a day a filter bag may become filled and replaced.

Basis of Payment

Dewatering shall be considered incidental to the work being performed and shall be included in the cost of other items.

The cost of the pump, materials, installation, inspection, maintenance, sediment filter bags, filter stone, secondary containment, removal and proper disposal, and all necessary incidentals shall be included in the cost of other items.