

ITEM 11613.0101 M - TOPSOIL URBAN PLANTING MIX

DESCRIPTION:

The work shall consist of furnishing, mixing and placing a load bearing mixture of topsoil in conformance with the lines, grades and thicknesses shown in the contract documents or as designated by the Engineer.

MATERIALS:

All the requirements of §713-01 Topsoil shall apply except as follows:

1. The pH of the material shall be between 6.0 and 7.4.
2. The organic content shall be not less than 5% or more than 20%. The organic materials used to amend or manufacture topsoil shall conform with the requirements of 713-15.

3. Gradation

- A. Crushed Stone - Shall be granite or sandstone. No limestone shall be used.

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
25 mm	100
12.5 mm	0

- B. Soil - Shall meet the following:

1. Not less than 20% nor more than 50% of the soil by weight shall be sand. 100% of the sand fraction shall pass the 2 mm sieve and 100% shall be retained by the 50 µm sieve.
2. Not less than 10% nor more than 40% of the soil by weight shall be silt. The particle size distribution for silt shall be 2 µm to 50 µm.
3. Not less than 20% nor more than 40% of the soil by weight shall be clay. The particle size distribution for the clay shall include all particles smaller than 2 µm.
4. Prior to acceptance, the contractor shall have the soil analyzed for chemical/nutrient levels using Morgan's Extraction procedure. Samples for this analysis shall be from a portion of the samples used for testing under 713-01. Levels of the following nutrients shall fall within the following:

Nitrate	1 to 2.5 ppm
Phosphorus	0.1 to 0.3 ppm
Potassium	6 to 14 ppm
Magnesium	50 to 70 ppm
Manganese	2 to 5 ppm
Iron	0.5 to 2.0 ppm
Zinc	0.004 to 0.1 ppm
Calcium	400 to 800 ppm

ITEM 11613.0101 M - TOPSOIL URBAN PLANTING MIX

If the soil is deficient in any nutrient, supplementary fertilizer shall be added to meet these requirements.

5. Hydrogel/Wetting Agent - Shall be a potassium propenoate-propenamide copolymer hydrogel such as:
 - a. Gelscape, Amereq Corporation, 50 North Harrison, Congers, NY 10920
 - b. Soilmoist, JRM Chemical Inc., 13600 Broadway Avenue, Cleveland, OH 44125
 - c. Supersorb, Aquatrols Corporation, 5 North Olney Avenue, Cherry Hill, NJ 08003

6. Water - Shall comply wit §712-01.

CONSTRUCTION DETAILS:

Crushed stone, soil, hydrogel, organic material, water and any fertilizer or limestone necessary to meet the requirements of this specification shall be mixed prior to placement. Mixing shall uniformly blend the specified components in the approximate ratio indicated below and shall meet the additional following requirements:

Approximate ratio of urban planting mix components - Units of Weight - Stone, Soil and Hydrogel ratios are dry weight basis:

Crushed Stone	100
Soil	20
Hydrogel	0.03
Total Moisture	10

1. The dry hydrogel shall be mixed with a sufficient amount of water to form a slurry. The slurry shall be allowed to set for at least one hour with periodic agitation/mixing to assure hydration of the hydrogel.
2. The hydrogel slurry shall be added to the crushed stone during mixing before the soil is added. Mixing shall continue for a sufficient time, but not less than ten (10) minutes to assure the crushed stone is completely coated with the hydrogel slurry.
3. The soil shall be added to the crushed stone and slurry mixture in a manner that assures the resulting mix is free of clods. The mixing shall be controlled to assure over mixing does not cause the material to become pelletized.
4. The resulting Topsoil Urban Planting Mix (crushed stone, hydrogel and soil mixture) shall be protected from drying prior to placement.

The Urban Planting Mix shall be placed in the locations specified in the contract documents. It shall be

ITEM 11613.0101 M - TOPSOIL URBAN PLANTING MIX

the contractor's responsibility to properly compact the mixture. The contractor shall determine the type, size and weight of compactor best suited to the work and select and control the lift thickness. The contractor shall also exert proper control over the moisture content of the mixture and other details necessary to obtain satisfactory results.

The Department will inspect the contractor's operations and will permit the work to continue where:

1. Lift thickness is controlled and is consistent with the compaction equipment selected.
2. The compactive effort is uniformly applied.
3. The Engineer concludes from visual observation that proper compaction has been obtained.

When tests are performed, the tests shall indicate that not less than 95% of the Standard Proctor Maximum density is attained.

Whenever the contractor's operations do not conform to the above criteria, the Engineer will prohibit placement of additional material until the contractor takes corrective action.

When the Engineer determines density tests are necessary, the contractor shall provide any assistance required to facilitate such tests. Such assistance shall include, but will not be limited to, excavation and backfill of test holes. This work shall be considered to be incidental to construction.

METHOD OF MEASUREMENT:

Topsoil Urban Planting Mix shall be measured per cubic meter measured in place.

BASIS OF PAYMENT:

The unit price bid per cubic meter shall include the cost of all labor, materials and equipment, including stone, topsoil, hydrogel, water, transportation, testing, mixing, fertilizer and all incidental necessary and required to complete the work in accordance with the plans and specifications and as directed by the Engineer.