

# UTELITE URBAN TREE STRUCTURAL SOIL INSTALLATION

## PART 1: GENERAL

### STRUCTURAL SOIL MEDIA

- A. Utelite 'Coarse' Expanded Shale 5 parts
- B. Clay Loam 1 part

### TREE PIT BACKFILL PLANTING MIX

- A. Structural Soil Mix 1 part
- B. Quality Topsoil 1 part

## PART 2: COMPONENTS

- A. Utelite Coarse Rotary Kiln Expanded Shale

Coarse (1/2" to #4)

Sieve Size	% Passing
1"	100
3/4"	90-100
3/8"	10-60
#4	0-10

ASTM C29 Unit Dry Weight Loose (cu. ft.) 47 – 57 lbs.

Acceptable Expanded Shale Manufacturer and Supplier:

**Utelite Corporation, Scott Jenson, 801-243-9348**  
**PO Box 387, Coalville, UT 84017**

- B. Clay Loam

Texture: 20-40% sand  
20-35% silt  
25-40% clay  
<5% organic

Quality Topsoil will have favorable characteristics and properties as determined by soil analysis. Analysis to include pH, EC, SAR, OM, Texture, NO<sub>3</sub> - N, P, K, FE.

### **PART 3: MIXING PROCEDURE**

1. Mechanically mix sand, clay and loam (if necessary) to meet clay loam specifications.
2. Saturate the Expanded Shale with water.
3. Mechanically mix 1 part of the DRY clay loam to 5 parts of the wetted Expanded Shale until a uniform distribution of the components is achieved and the aggregate particles are completely coated with the clay loam.
4. When stockpiling the finished mix, cover the pile with a tarp to prevent drying out and separation from rain.

### **PART 4: PREPARATION**

- A. Preparing Subgrade:
  - a. Remove all organic matter, debris, loose material and large rocks.
  - b. Dig out soft and/or mucky spots and replace with suitable material.
  - c. Uniformly compact subgrade to 90% of its maximum density.
- B. Perforated Underdrain System (if specified):
  - a. Install underdrain system with sock or soil separator fabric as specified.

### **PART 5: INSTALLING STRUCTURAL SOIL**

- A. Place Utelite Urban Tree Structural Soil in lifts not exceeding 12 inches deep. Compact using a vibratory plate, performing a minimum of two passes, of not less than 10 seconds per pass, before moving to the next adjacent location. Additional passes may be required as determined by the field engineer. Continue placing and compacting in 12-inch lifts until the specified depth is reached.
- B. For large areas, a small vibratory roller may be used. Compacted lifts should not exceed 12 inches and should receive 2 – 4 passes as determined by the field engineer.

### **PART 6: CONCRETE PLACEMENT**

- A. The concrete subbase for the unit paver shall be placed as specified directly on the approved compacted Structural Soil.

### **PART 7: TREE PIT PREPARATION**

- A. Tree Pit Excavation:

- a. Excavate the Structural Soil to a depth equal to the height of the root ball of the tree to be planted. Remove the Structural Soil to within no more than one foot of the edge of the paved area.
- b. Place the tree in the pit and backfill as described below as soon as possible. No tree pit shall remain excavated for more than 2 hours unless forms are used.

B. Tree Pit Backfill Planting Mix:

- a. Remove any wooden forms. Immediately place tree in the pit as detailed and backfill with the Tree Pit Backfill Planting Mix referenced in this specification.
- b. Hand tamp the planting mix in 12-inch lifts until the pit is filled to the specified grade.