

Section 2110. Soil Aggregate Subbase

2110.01 DESCRIPTION.

Construct soil aggregate subbase using soil from the subgrade combined with mineral aggregate present on the road surface, with the possible addition of aggregate.

2110.02 MATERIALS.

Use granular material that may be present on the roadbed plus the specified quantity of material meeting the requirements of [Section 4120](#).

2110.03 CONSTRUCTION.

A. Soil Aggregate Subbase Equipment.

Use equipment that meets the requirements of [Section 2001](#) and the following:

1. Weighing Equipment.

Apply [Article 2001.07](#).

2. Compaction Equipment.

Apply [Article 2001.05](#) except that other types of equipment may be used provided it is demonstrated they will consistently produce the specified density. Use equipment designed so that its operation will not distort the subgrade.

3. Equipment for Applying Water.

Apply [Article 2001.09](#).

4. Field Laboratory.

Apply [Section 2520](#).

B. Roadbed Correction.

Correct the portion of the roadbed to be used for soil aggregate subbase according to [Article 2111.03, B](#).

C. Soil Aggregate Subbase Construction.

1. The Contractor may be required by the contract documents to furnish granular material for subbase construction in addition to that present on the existing roadbed. Uniformly distribute this additional material over the area to be occupied by the subbase at the rates specified.
2. Blade or scarify the roadbed to the depth necessary to:
 - Produce a smooth subgrade matching the cross section shown in the contract documents, and
 - Provide the quantity of material which, when combined with the granular material to be added, will produce a compacted subbase of the thickness designated.
3. Adapt the methods and sequence of operations to the width of roadbed and the quantity of granular material to be added in order to achieve the following results:
 - a. Mix road surface materials and added granular material to the degree that there are no seams or streaks of separate material in evidence from visual inspection, and pulverize so that there are no soil particles larger than 2 inches (50 mm) in greatest dimension.
 - b. The moisture content of the soil aggregate mixture will be approved on the basis of visual inspection. Uniformly wet or dry the material so that at the time it is spread and compacted it contains the amount of water necessary to obtain the required density, together with stability, with the field compaction process. Maintain the moisture content in the mixture until compaction is completed. Place wetted material in windrows prior to spreading for compaction. Smooth and roll to correct subgrade distortions greater than 1 inch (25 mm) above or below the intended plane of the bottom of the subbase.
 - c. At railroad crossings, junctions with existing pavement, bridges, and similar structures, excavate the subgrade to permit the full thickness of subbase, base, and surface courses to be constructed to the proper elevation. Omit soil aggregate subbase for a distance of 50 feet (15 m) from railroad crossings, bridges, and existing intersection pavements. In these areas, thicken the specified base sufficiently to replace the omitted subbase.

- d. Sprinkle the surface on which the subbase is to be constructed with water as necessary to assure a moist condition to a depth of at least 1/2 inch (15 mm).
4. Spread and shape the prepared subbase material to assure conformance, after compaction, with the cross section shown in the contract documents. Compact the subbase at the moisture content specified in [Article 2110.03, C, 3, b](#), to a density no less than 95% of maximum density as determined by Materials Laboratory Test Method No. Iowa 103. During compaction operations, perform additional shaping as necessary. Apply [Article 2111.03, D](#), to the profile and cross-section.

D. Maintenance of Completed Subbase.

Apply [Article 2111.03, E](#).

2110.04 METHOD OF MEASUREMENT.

Measurement for the quantities of the items associated with soil aggregate subbase will be as follows:

A. Construction of Soil Aggregate Subbase.

Miles (kilometers) shown on the contract documents. This will be determined along the center line of the subbase, including approaches to railroad crossings, bridges, and similar structures. At intersections, the length of subbase will not include that portion of centerline which overlaps previously determined pavement, base course, or subbase.

B. Granular Material.

Tons (megagrams) as computed by the Engineer from the weights (mass) of material delivered. No deduction will be made for moisture naturally occurring in the material.

2110.05 BASIS OF PAYMENT.

Payment will be the contract unit price for the items associated with soil aggregate subbase as follows:

A. Construction of Soil Aggregate Subbase.

1. Per mile (kilometer).
2. Payment is full compensation for:
 - Roadbed correction.
 - Furnishing and applying water.
 - For doing all work necessary for completion of the soil aggregate subbase in compliance with the contract documents except for furnishing and hauling granular material.

B. Granular Material.

1. Per ton (megagram) for the granular material for soil aggregate subbase furnished and incorporated in the work.
2. Excavation or filling for roadbed correction in excess of 3 inches (75 mm) at locations other than structures or existing pavement will be paid for according to [Article 2102.05](#), or if no contract unit price is provided, as extra work.