

305 – AGGREGATE BASE AND AGGREGATE SHOULDERS

SECTION 305

AGGREGATE BASE AND AGGREGATE SHOULDERS

305.1 DESCRIPTION

Construct aggregate base and aggregate shoulders on prepared subgrade as shown in the Contract Documents.

BID ITEMS

- Aggregate Base (*)(**)
- Aggregate Shoulder (*)(**)
- Calcium Chloride
- Water (Aggregate Base) (Set Price)
- Water (Aggregate Shoulders) (Set Price)
- *Type of Aggregate
- **Thickness

UNITS

- Square Yard
- Square Yard
- Ton
- M Gallon
- M Gallon

305.2 MATERIALS

Provide materials that comply with the applicable requirements.

Aggregate for Aggregate Base	DIVISION 1100
Aggregate for Shoulder	DIVISION 1100
Calcium Chloride	DIVISION 1700
Water for Aggregate Base and Aggregate Shoulder	DIVISION 2400

305.3 CONSTRUCTION REQUIREMENTS

a. Subgrade Preparation. Unless other subgrade preparation is included in the Contract Documents, water, scarify, blade and compact the roadway and shoulder subgrade to obtain the lines and grades shown in the Contract Documents. Remove all vegetation before shaping and rolling. Remove and dispose of any excess material. If additional embankment material is needed, obtain the material from locations shown in the Contract Documents or as directed by the Engineer.

Excavate the subgrade as shown in the Contract Documents. If existing pavements or bridges are encountered, excavate the subgrade at all control points to a depth that will allow placement of the required thickness, flush with the existing surface. Use a transition (from normal to special section) of sufficient length to prevent an abrupt or noticeable change in grade. Remove and dispose of the excavated subgrade. Compact the excavated areas to a depth of 6 inches, according to the Contract Documents. When subgrade compaction is not specified in the Contract Documents, compact the excavated areas to a depth of 6 inches, according to Type B, MR-90, SECTION 205.

b. Mixing. The mixing methods are:

- Central Plant Method. Use a stationary mechanical mixing plant to uniformly mix the water and aggregate.
- Road Mix Method. After the aggregate is placed in a uniform windrow, use a motor grader, or other equipment approved by the Engineer, to uniformly mix the water and the aggregate.

Mix the aggregate with sufficient water to allow compaction of the mixture to the specified density. If the aggregate is predominantly limestone, use the central plant. Use a central plant or road mix method to mix types of granular aggregate other than limestone, or to mix any type of aggregate if the original contract quantity is less than 15,000 square yards.

When shown in the Contract Documents, mix calcium chloride with the aggregate at the specified rate. Add the calcium chloride (in solution, flakes, pellets or granular) at the same time the water is mixed with the aggregate.

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c. Placing, Compacting and Finishing. Immediately after mixing the aggregate and water, use an aggregate spreader to place the mixture full-lane or full-shoulder width. Do not place the mixed material on the prepared subgrade when conditions are such that the hauling and placing will damage the prepared subgrade. Do not dump or mix the aggregate on any paved surface.

The maximum compacted thickness of any layer of aggregate base or shoulder is 6 inches. If the thickness is greater than 6 inches, spread and compact the aggregate base in multiple lifts of equal thickness with a maximum lift thickness of 6 inches. The maximum compacted thickness of any layer may be increased to 8 inches when vibrating compaction equipment or other compaction equipment is approved by the Engineer. On aggregate course projects without shoulders, construct all lifts, regardless of thickness, with an edge slope of 1:1 or flatter. If the aggregate base or shoulder is constructed in more than 1 layer, allow sufficient time for the initial layer to cure to prevent any rutting or surface distortion from equipment being used to place the succeeding layers.

Spread and compact the aggregate base or shoulders as specified in the Contract Documents. Compact the aggregate base to a minimum uniform density of 95% of the standard density. Compact the aggregate shoulders until no further consolidation is gained by additional blading and rolling. The Engineer will visually verify compaction of the aggregate shoulders.

After compacting the aggregate base, trim the surface to the specified lines and grades. On projects having more than 20,000 square yards of aggregate base, use automatic grade controlled equipment to trim the compacted aggregate base. In irregular areas, trim the aggregate base by wetting, blading and rolling. Compact the trimmed surface of the aggregate base with a smooth-wheel or a pneumatic-tire roller. When necessary, lightly scarify and blade the surface to eliminate equipment imprints while performing final rolling.

d. Curing and Maintenance of Aggregate Base. Cure the compacted layer to develop sufficient stability to resist wheel truck rutting before vehicular hauling or heavy equipment is permitted on the base. When Contract Documents call for a PGAB or cutback asphalt prime coat on the aggregate base, cure the compacted layer to maximum moisture content of 60% of optimum moisture content for AB-1, AB-2, & AB-4 and 70% for AB-3, prior to the construction of the Asphalt Prime Coat. The Engineer will perform testing to determine when the cure of the aggregate base is complete. The Engineer may require that the surface of the aggregate base be kept moist during the curing period to prevent loss of surface material.

Do not apply surfacing until the aggregate base is cured. Maintain the base until the surfacing is applied.

e. Shoulders, Entrances and Side Roads. When shoulder construction is not included in the Contract Documents, re-construct, compact and shape the existing shoulder from the top of the completed aggregate base to the shoulder line. Shape the shoulders to provide a uniform shoulder line.

Raise the grade of entrances and side roads to meet the edge of the completed aggregate base. Construct, compact and shape the entrances and side roads full width with shoulders and shoulder radii adjacent to the shoulders of the roadway.

Obtain additional embankment material for shoulders, entrances and side roads from adjacent slopes and ditches. Dispose of excess material from shoulders, entrances and side roads on adjacent backslopes.

305.4 MEASUREMENT AND PAYMENT

The Engineer will measure aggregate base and aggregate shoulder by the square yard.

The Engineer will measure the water used in the mixture and used on the finished surface during the curing period by the M Gallon using calibrated tanks or distributors. The Engineer will not measure water in the mixture in excess of 5% above the optimum moisture. The Engineer will not measure water used for subgrade preparation or construction of earthen shoulders, entrances and side roads. The Engineer will not measure water used for dust control or water wasted through the Contractor's negligence.

The Engineer will measure Grade 2 calcium chloride (concentrated calcium chloride or equivalent) used in the mixture by the ton. If Grade 1 calcium chloride (regular) is used, 1.2 tons of Grade 1 is the equivalent of 1 ton of Grade 2. The Engineer will not measure the wedges at the pavement edge.

Payment for "Aggregate Base", "Aggregate Shoulders" and "Calcium Chloride" at the contract unit prices and "Water (Aggregate Base) (Set Price)" and "Water (Aggregate Shoulders) (Set Price)" at the contract set unit prices is full compensation for the specified work.