

CITY OF ODESSA
STANDARD SPECIFICATIONS

ITEM 25
ASPHALT STABILIZED BASE (PLANT MIX)

25.1 DESCRIPTION

This item shall consist of base courses, subbase courses or foundation courses to be composed of a compacted mixture of mineral aggregate and asphaltic material mixed hot in a mixing plant. The percent asphalt shall be determined in accordance with Test Method Tex-126-E (Texas Highway Department) or other established procedures as directed by the Engineer.

25.2 MATERIALS

A. Asphaltic Materials

1. Mixture

Asphalt for the mixture shall be AC-10. The percent of asphalt to be used will be determined by the Engineer after design tests have been made using the mineral aggregate approved for use in the construction of this item. The Contractor shall notify the Engineer of the source of his asphaltic material prior to production of the asphaltic mixture and this source shall not be changed during the course of the project, except on written permission of the Engineer.

2. Tack Coat

The asphaltic material for tack coat shall meet the requirements for emulsified asphalt EA-11M, cut-back asphalt RC-2, or shall be a cutback asphalt made by combining 50% to 70% by volume of the asphaltic material as specified for the type of paving mixture with 30% to 50% by volume of gasoline and/or kerosene. If RC-2 cut-back asphalt is used, it may, upon instructions from the Engineer, be diluted by the addition of an approved grade of gasoline and/or kerosene, not to exceed 15% by volume. Asphaltic materials shall meet the requirements of the item "Asphalts, Oils and Emulsions" (Item 300, Texas Highway Department Standard Specifications).

B. Mineral Aggregate

1. Description

The material shall be crushed or uncrushed and screened as necessary to meet the requirements hereinafter specified and shall consist of durable coarse aggregate particles mixed with approved binding materials.

2. Grades

Unless otherwise specified, the grading of the mineral aggregate shall conform to the limitations shown below:

Grade 1:	<u>Percentage by Weight Passing</u>
1-3/4"	100%
7/8"	65 - 90 %
3/8"	50 - 70 %
No. 4	35 - 55 %
No. 40	15 - 30 %
No. 200	0 - 16 %

Unless otherwise specified on the plans, the mineral aggregate shall meet the following physical requirements:

Wet Ball Mill	55 Max.
Plasticity Index	15 Max.
Liquid Limit	45 Max.

Testing of the mineral aggregate shall be in accordance with standard laboratory methods.

Samples for testing the material shall be taken prior to the mixing operations. Where more than one material is used, tests will be on the combined materials unless otherwise shown on the plans.

The percent asphaltic material in the mixture shall be as determined by the Engineer using established methods.

3. Material Sources

The material shall be crushed or uncrushed and screened as necessary to meet the requirements hereinafter specified and/or shown on the plans and shall consist of durable particles of stone mixed with approved binding materials.

25.3 ASPHALT STABILIZED MIXTURE

A. Paving Mixture

The mixture shall consist of a uniform mixture of mineral aggregate and asphaltic material. The asphaltic material shall be from 4% to 9% of the mixture by weight unless otherwise shown on the plans.

B. Tolerances

The Engineer will designate the asphalt content to be used in the mixture design tests have been made with the aggregate to be used in the project. When tested as determined by the Engineer, samples of the mixture shall not vary from the asphalt content designated by the Engineer by more than 0.5% dry weight (based on total mixture).

25.4 EQUIPMENT

Equipment shall meet the requirement of Item 292.4 of the 1972 Texas Highway Department Standard Specifications.

25.5 STOCKPILING, STORAGE, PROPORTIONING AND MIXING

Stockpiling, storage, proportioning and mixing shall meet the requirements of Item 292.5 of the 1972 Texas Highway Department Standard Specifications.

25.6 CONSTRUCTION METHODS

The mixture shall be placed with a spreading and finishing machine and shall not be placed when the air temperature is below 50E F. and falling, but it may be placed when the air temperature is above 40E F. and rising. The air temperature shall be taken in the shade away from artificial heat. It is further provided that the prime coat, tack coat or asphalt stabilized base shall be placed only when the humidity, general weather conditions, and temperature and moisture condition of the subbase or subgrade, in the opinion of the Engineer, are suitable.

If the temperature of a load of the asphaltic mixture or any part of a load becomes 50E F. or more, less than the mixing temperature selected by the Engineer as provided in this specification after being dumped from the mixer and prior to placing, all or any part of the load may be rejected and payment will not be made for the rejected material.

A. Tack Coat

Before the asphaltic mixture is laid, the surface upon which the tack coat is to be placed shall be cleaned thoroughly to the satisfaction of the Engineer. The surface shall be given a uniform application of tack coat under asphaltic materials of this specification. This tack coat shall be applied, as directed by the Engineer, with an approved sprayer at a rate not to exceed 0.10 gallon per square yard of surface. Where the mixture will adhere to the surface on which it is to be placed without the use of a tack coat, the tack coat may be eliminated by the Engineer. All contact surfaces of curbs and structures and all joints shall be painted with a thin uniform coat of the asphaltic material used for the tack coat. The tack coat shall be rolled with a pneumatic tire roller as directed by the Engineer.

B. Transporting

The asphaltic mixture, prepared as specified above, shall be hauled to the work in tight vehicles previously cleaned of all foreign material. The dispatching of the vehicles shall be arranged so that all material delivered may be placed, and all rolling shall be completed during daylight hours. In cool weather or for long hauls, canvas covers and insulating of the truck bodies will be required. The inside of the truck body may be given a light coat of oil, lime slurry or other material satisfactory to the Engineer, if necessary, to prevent mixture from adhering to the body.

C. Placing

1. Generally, the asphaltic mixture shall be dumped and spread on the approved prepared surface with the specified spreading and finishing machine, in such a manner that when properly compacted, the finished course will be smooth, of uniform density, and will conform with the typical sections shown on the plans and to the lines and grades established by the Engineer. During the application of asphaltic material, care shall be taken to prevent splattering of adjacent pavement, curb and gutter and structures.
2. The mixture shall be spread and compacted in layers or lifts as specified on the plans or as directed by the Engineer. The sequence of compacting shall be such that undue displacement of the edge of the course does not occur. On deep lifts, the edge of the course may be rolled with a motor grader wheel or similar equipment or supported by blading a roll of earth against the edge of the course prior to compacting the surface.
3. When the asphaltic mixture is placed in a narrow strip along the edge of an existing pavement, or used to level up small areas of an existing pavement or placed in small irregular areas where the use of a finishing machine is not practical, the finishing machine may be eliminated when authorized by the Engineer, provided a satisfactory surface can be obtained by other approved methods.

D. Compacting

1. As directed by the Engineer, the asphalt stabilized base shall be compressed thoroughly and uniformly with the specified rollers.
2. Rolling with the three wheel and tandem rollers shall be done longitudinally, overlapping on successive trips by at least half the width of the rear wheel unless otherwise directed by the Engineer. Alternate trips of the roller shall be slightly different in length. On super-elevated curves, rolling shall begin at the low side and progress toward the high side unless otherwise directed by the Engineer. Rolling with the pneumatic-tired roller shall be done as directed by the Engineer. Rolling shall be continued until no further compression can be obtained and all roller marks are eliminated. One tandem roller, one pneumatic-tired roller and at least one three wheel roller, as specified above shall be provided for each job. If

the Contractor elects, he may substitute the three-axle tandem roller for the two-axle tandem roller and/or the three wheel rollers; but three rollers shall be in use on each job unless otherwise permitted by the Engineer in writing. Additional rollers shall be provided if needed. The motion of the rollers shall be slow enough at all times to avoid displacement of the mixture. If any displacement occurs, it shall be corrected at once by the use of rakes and fresh mixture where required. The roller shall not be allowed to stand on any portion of the mixture which has not been fully compacted. To prevent adhesion of the mixture to the roller unless otherwise directed by the Engineer, the roller wheels shall be kept thoroughly moistened with water, but an excess of water will not be permitted. All rollers must be in good mechanical condition. Necessary precautions shall be taken to prevent the dropping of gasoline, oil, grease or other foreign matter on the roadway, either when the rollers are in operation or when standing.

3. Hand Tamping. In locations not accessible to the roller or in locations where thorough compaction cannot be obtained with the roller, compaction shall be accomplished by the use of lightly oiled tamps.

E. Surface Finish

The compacted material shall conform to the typical cross sections, lines and grades as shown on plans and directed by the Engineer and shall have a smooth surface with a reasonably uniform texture acceptable to the Engineer. Unacceptable finished surfaces may be corrected by the placement of additional mixture, all at the expense of the Contractor.

F. Protection of the Work and Opening to Traffic

The completed asphalt stabilized base course shall be opened to traffic as provided by the plans and as directed by the Engineer.

25.7 IN PLACE DENSITY

When in place density is required, it is the intent of this specification that the material be placed and compacted to the percent of the maximum molded gyrated density as determined by Test Method Tex-126-E (T.H.D.) Or as specified on the plans. The maximum molded gyrated density shall be determined from material sampled from the mixing plant and molded in accordance with Test Method Tex-126-E (T.H.D.). Procedures and methods outlined in Test Method Tex-126-E shall also be used in determining the in place density unless determined otherwise by the Engineer. The field specimens utilized for the in place density testing may be either cores or sections of asphalt stabilized base. Other methods of determining in place density which correlate satisfactorily with those results obtained through use of Test Method Tex-126-E may be used. In place density tests are intended for control tests. If the in place density of the mixture has a value lower than that specified and in the opinion of the Engineer is not due to a change in the quality of the material, production may proceed with subsequent changes in the mix and/or construction operation until the in place density equals or exceeds the specified density. Requirements specifying air temperature limitations for placing and types of rollers to be furnished are not applicable when in place density is specified.

25.8 MEASUREMENT

Asphalt stabilized base will be measured by the square yard of completed and accepted work in accordance with these specifications or accompanying plans. Prime coat shall not be measured separately and the cost shall be included in the bid item for "Pavement".

25.9 PAYMENT

The work performed and materials furnished as prescribed by this item and measured as provided under "Measurement" will be paid for at the unit prices bid per square yard complete in place, as specified herein or shown on accompanying plans.