

ITEM 322

TWO COURSE SURFACE TREATMENT

- 322.1 Description. This item shall consist of a wearing surface composed of two applications of asphaltic material, each covered with aggregate, constructed on a prepared base course or surface in accordance with these specifications.

Two course surface treatment shall not be applied when the air temperature is below 50°F and is falling, but it may be applied when the air temperature is above 40°F and is rising. Air temperature shall be taken in the shade and away from artificial heat. Two course surface treatment shall not be applied when the roadway surface is below 60°F. Asphaltic material shall not be placed when general weather conditions, in the opinion of the Engineer, are not suitable.

- 322.2 Materials. Asphaltic material shall conform to the requirements of Item 300, "Asphalts, Oils and Emulsions", contained in the Texas Department of Transportation's (TxDOT's) "Standard Specifications for Highways, Streets and Bridges", latest edition. The CRS-2P shall be a rapid setting cationic emulsion for use in placing surface treatments, when the air temperature is 60°F and rising. CRS-1P shall be a rapid setting cationic emulsion for use in placing surface treatments when the air temperature is between 40°F and 70°F. The emulsion shall break and cure in a reasonable amount of time when the aggregate is applied, regardless of sunlight or humidity conditions. The emulsion supplier shall furnish the Engineer samples of the base asphalt and polymer used in making the finished emulsion to be tested in accordance with TxDOT Article 300.2.

The aggregate shall be washed crushed limestone and shall consist of angular fragments of rocks (excluding schist, shale or slate), of uniform quality throughout, with not more than 5-percent of soft friable material and not more than 5-percent of flat or elongated pieces, the width of which is less than half the length, and with a percent of wear of not more than 35, when tested in accordance with the Los Angeles Abrasion Test, ASTM Method C131. Pre-coated aggregate shall be aggregate of the type and grade specified, coated with 0.5 to 1.5 percent by weight of residual bitumen from a pre-coating material. The limestone rock asphalt shall be fluxed with 0.5 to 1.5 percent by weight of fluxing material.

When tested by TxDOT Test Method Tex-200-F, Part 1, the aggregate shall meet the gradation requirements specified below:

APPLICATION NO. 1

<u>RETAINED ON 5/8" SCREEN</u>	<u>0 TO 2%</u>
<u>RETAINED ON 1/2" SCREEN</u>	<u>20 TO 40%</u>
<u>RETAINED ON 3/8" SCREEN</u>	<u>80 TO 100%</u>
<u>RETAINED ON 1/4" SCREEN</u>	<u>95 TO 100%</u>
<u>RETAINED ON NO. 10 SCREEN</u>	<u>99 TO 100%</u>

APPLICATION NO. 2

<u>RETAINED ON 5/8" SCREEN</u>	<u>0%</u>
<u>RETAINED ON 1/2" SCREEN</u>	<u>0 TO 2%</u>
<u>RETAINED ON 3/8" SCREEN</u>	<u>20 TO 35%</u>
<u>RETAINED ON 1/4" SCREEN</u>	<u>95 TO 100%</u>
<u>RETAINED ON NO. 10 SCREEN</u>	<u>99 TO 100%</u>

322.3

Construction Methods. All holes, ruts, depressions or other defects in the surface shall be repaired by cleaning out defective areas by scarifying or acceptable hand methods and after being filled with new material of the same character as contained in the road surface, or other materials approved by the Engineer and shall be compacted by rolling or tamping so that a smooth, hard, well cemented surface, conforming to the lines, grade and typical cross-section shown on the plans is secured. After the required repairs have been made in an acceptable manner and the patches allowed to set-up under traffic and are properly bonded, the surface of the roadway shall be swept clean from dirt, dust and other deleterious matter by means of a mechanical rotary street sweeper, hand brooms or compressed air. All cakes of dust or clay and all foreign matter shall be removed and the surface thoroughly cleaned before any bituminous material is applied and until the top embedded aggregate is cleaned, but not dislodged or loosened. If found necessary by the Engineer, the surface may be lightly sprinkled just prior to the application of the bitumen.

Bituminous material shall be applied on the clean surface at the rate of 0.30 gallons per square yard and covered with the No. 1 aggregate at the rate of one cubic yard (loose measure) to each 95 square yards of surface area. The work shall then be rolled and a second application of 0.30 gallons of asphaltic material per square yard shall be made. The bituminous material application rate may be varied by the Engineer. The No. 2 aggregate shall be applied at the rate of one cubic yard (loose measure) to each 80 square yards of surface area.

The entire surface shall be thoroughly rolled with a self-propelled roller giving a compression of not less than 200-pounds per inch of roller width.

The aggregate shall be evenly and accurately distributed to the end that an even and smooth surface shall be obtained. After the work has been completed as specified above, there should be a slight excess of the No.

2 stone over the surface. The Contractor shall repair all fatty spots with additional cover material and all lean mixtures by additional asphalt, to the extent that a uniform dense treatment is finally obtained. Should depressions or unevenness or irregular spots develop in the surface, they shall be remedied and the surface brought to true grade and cross-section.

322.4 Measurement. Asphaltic material will be measured at the point of application, on the road, in gallons at the application temperature. The quantity to be paid for shall be the number of gallons used, as directed, in the accepted surface treatment.

Aggregate shall be measured by the ton of 2,000 pounds, dry weight, actually used in the work. The dry weight shall be determined by deducting the weight of the moisture from the weight of the material.

322.5 Payment. The work performed and the materials furnished as prescribed by this item and measured as provided under measurement will be paid for at the unit prices bid for "Asphalt" and "Aggregate", which prices shall be full compensation for cleaning and sprinkling the base; for furnishing, preparing, hauling, and placing all materials; for all freight involved; and for all manipulations, labor, tools and equipment and incidentals necessary to complete the work, including rolling.

There are line code(s), description(s), and unit(s) for this item.

END OF ITEM 322

## SUMMARY SHEET

### ITEM 322 - TWO COURSE SURFACE TREATMENT

#### Other Specifications Required

Item 205, Subgrade  
Item 230, Crushed Limestone Base Course

#### Reference Standards

1. ASTM C136
2. ASTM C131
3. ASTM D946
4. THD Item 300

#### Description

This item shall consist of a wearing surface composed of two applications of asphaltic material, each covered with aggregate.

#### Payment

- (1) Asphalt is paid for by the contract unit price, per gallon.
- (2) Aggregate is paid for by the contract unit price, per ton.

DO NOT INCLUDE THIS SHEET IN THE CONTRACT SPECIFICATIONS