

SECTION 32 10 00

BITUMINOUS CONCRETE PAVEMENT
07/06

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO T 230 (1968; R 2000) Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures

AASHTO T 30 (1993; R 1998) Mechanical Analysis of Extracted Aggregate

ASTM INTERNATIONAL (ASTM)

ASTM D 1559 (1989) Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus

ASTM D 2172 (2001e1) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION (DOT)

SCDOT (2000) Standard Specification for Highway Construction

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS TT-P-115 (Rev F) Paint, Traffic (Highway, White and Yellow)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Trial batch reports

Mix design

Asphalt concrete

Density

Thickness

Straightedge test

Submit reports for testing specified under paragraph entitled "Field Quality Control."

SD-07 Certificates

Asphalt mix delivery record

Asphalt concrete and material sources

Obtain approval of the Contracting Officer for materials and material sources 2 days prior to the use of such material in the work.

Asphalt concrete

Curbs

Guard (Guide) rails

Median barriers

Traffic signs

Submit certificates, signed by the producer, that paving materials and incidental construction items conform to specification requirements.

1.3 QUALITY ASSURANCE

1.3.1 Regulatory Requirements

Provide work and materials in accordance with applicable requirements of SCDOT.

1.3.2 Modification of References

Where term "Engineer" is used in SCDOT it shall be construed to mean Contracting Officer. Where term "state" is used, it shall mean "Federal Government".

1.3.3 Mix Delivery Record Data

Record and submit the following information to each load of mix delivered to the job site. Submit within one day after delivery on Government-furnished forms:

- a. Truck No:
- b. Time In:
- c. Time Out:
- d. Tonnage and Discharge Temperature:
- e. Mix Type:
- f. Location:
- g. Stations Placed:

1.3.4 Trial Batch

Submit current bituminous design reports for all mix types proposed for use on the project.

1.3.5 Mix Design

Submit results of laboratory tests performed on each mix design. Testing shall have been accomplished not more than one year prior to date of material placement.

1.4 ENVIRONMENTAL REQUIREMENTS

Do not produce or place bituminous concrete when the weather is rainy or foggy, when the base course is frozen or has excess moisture, or when the ambient temperature is less than 40 degrees F in the shade away from artificial heat.

PART 2 PRODUCTS

2.1 ASPHALT CONCRETE

Provide asphalt concrete in accordance with the applicable requirements of the SCDOT, except where specified otherwise.

2.2 SUBBASE

SCDOT, materials for construction of the subbase shall be in accordance with Division 300, Section 301 .

2.3 BASE COURSE

SCDOT, materials for construction of the base course shall be in accordance with Division 300, Section 310

2.4 SURFACE COURSE

SCDOT, materials for construction of the surface course shall be in accordance with Division 400, Section 401

2.5 STRIPING

SCDOT, materials for paint striping shall be in accordance with Division 600, Section 604.

Paint shall conform to FS TT-P-115, Types I, or II.

2.6 CURBS

SCDOT, materials for construction of curbs and gutters shall be in accordance with Division 700, Section 720 .

2.7 TRAFFIC SIGNS

SCDOT, provide traffic signs in accordance with Division 600, Section 608 .

2.8 PRECAST CAR STOPS

Provide car stops to the profile and size indicated. .

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Excavation and Filling

Excavation and filling to establish elevation of subgrade is specified in Section 31 00 00 EXCAVATION.

3.2 CONSTRUCTION

Provide construction in accordance with the applicable requirements of the SCDOT, except where indicated or specified otherwise.

3.2.1 Subgrade

SCDOT, preparation of subgrade shall be in accordance with Division 200, Section 208, . Verify compacted subgrade, granular base, or stabilized soil is acceptable and ready to support paving and imposed loads.

3.2.2 Subbase

SCDOT, methods of construction of the subbase shall be in accordance with Division 300, Section 301 .

3.2.3 Base Course

SCDOT, methods of construction of the base course shall be in accordance

with Division 300, Section 301 .

3.2.4 Surface Course

SCDOT, methods of construction of the surface course shall be in accordance with Division 400, Section 401 . Placement will not be permitted unless the Contractor has a working asphalt thermometer on site. Install surface elevation of the pervious paving system 1/8 to 1/4 inch above adjacent drainage inlets, concrete collars, or channels.

3.2.5 Striping

SCDOT, provide paint striping in accordance with Division 600, Section 604 .

Allow bituminous pavement to cure for at least 21 days before paint is applied. Pavement shall be thoroughly clean and entirely free of loose sand, stones, dust, oil, grease, water, and other substances that will be deleterious to the paint or will adversely affect the adhesion of the paint. Do not apply paint during high wind (over 15 miles per hour) or high humidity (over 70 percent). Apply paint only when ambient temperature is 40 degrees F or above and rising but not more than 95 degrees F. Dimensions and arrangement of striping shall be as indicated. Apply paint to a wet film thickness of 0.015 inch by means of conventional traffic line striping equipment. Traffic shall not be permitted to use the painted areas for a minimum of 30 minutes after painting of lines has been completed.

3.2.6 Curbs and Gutters

SCDOT, methods of construction of curbs and gutters shall be in accordance with Division 700, Section 720 .

3.2.7 Traffic Signs

SCDOT, install traffic signs in accordance with Division 600, Section 608 .

3.2.8 Precast Car Stops

Provide car stops where indicated. Install with an anchor rod driven through each sleeve.

3.3 FIELD QUALITY CONTROL

Sample shall be taken by Contractor as specified herein. Contractor shall replace pavement where sample cores have been removed. Submit 2 pavement cores when using the in-place nuclear density method.

3.3.1 Testing

3.3.1.1 Bituminous Mix Testing

Take two samples per day per mix type at plant or from truck. Test uncompact mix for extraction in accordance with ASTM D 2172 and sieve analysis in accordance with AASHTO T 30. Test samples for stability and flow in accordance with ASTM D 1559. When two consecutive tests fail to

meet requirements of specifications, cease placement operations and test a new trial batch prior to resumption of placement operations. Submit 2 per day of each mix type. When two tests on uncompacted mix fail submit new trial batch for approval.

3.3.1.2 Testing of Pavement Course

- a. **Density**: Determine density of pavement by testing cores obtained from the binder and wearing course in accordance with **AASHTO T 230**. Take three cores at location designated by Contracting Officer for each **200 tons**, or fraction thereof, of asphalt placed. Deliver cores undisturbed and undamaged to laboratory and provide test results within **48** hours of each day placement of paving materials.
- b. **Thickness**: Determine thickness of the binder and wearing course from cores taken for density test.
- c. **Straightedge Test**: Test compacted surface of binder course and wearing course with a straightedge as work progresses. Apply straightedge parallel with and at right angles to center line after final rolling. Variations in the binder course surface shall not be more than **1/4 inches** from the lower edge of the **10 foot** straightedge; variations in wearing course surface shall not be more than **1/4** from the lower edge of the **10 foot** straightedge. Pavement showing irregularities greater than that specified shall be corrected as directed by Contracting Officer.

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