

## **SECTION 4 ASPHALT PAVING AND SURFACING**

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### **4-01 GENERAL**

This work shall consist of spreading and compacting of asphalt concrete, pavement fabric, prime coat and paint binder (tack coat). Asphalt concrete shall conform to the requirements of Section 39, "Asphalt Concrete," of the Caltrans Specifications, except as modified herein.

### **4-02 MATERIALS**

#### **4-02.01 Asphalt Binder**

The asphalt binder to be mixed with aggregate shall be a steam-refined paving asphalt conforming to the provisions in the current Caltrans Specifications Section 92, "Asphalts," and shall be of the grade PG 64-10. The amount of asphalt binder to be mixed with the aggregate will be determined in accordance with California Test 367 and approved by the Engineer using the samples of aggregates furnished by the Contractor in conformance with current Caltrans Specifications Section 39-3.03, "Proportioning."

A Certificate of Compliance shall be required for all grades of asphalt.

#### **4-02.02 Aggregate for Asphalt Concrete**

Asphalt concrete shall be Type B (medium) and shall be of the thickness as shown on the Plans or as specified in the Special Provisions or Technical Provisions.

Unless otherwise specified herein or on the plans, the aggregate grading shall conform to Caltrans Specifications Section 39-2.02, "Aggregate". Maximum aggregate size shall be as follows:

<u>Min. Thickness AC</u>	<u>Max. Agg.</u>
1-1/2" Surface Course / Top Lift	1/2"
Base Course / Initial Lift	3/4"

A Certificate of Compliance shall be required for all grades of aggregate.

#### **4-02.03 Pavement Fabric**

Pavement fabric shall conform to Section 88, "Engineering Fabrics," of the Caltrans Specifications, except as modified herein.

Pavement fabric shall be nonwoven, needle-punched polyester or polypropylene material and shall be *Petromat 4599* or approved equal.

#### **4-02.04 Liquid Asphalt (prime coat)**

The liquid asphalt used for prime coat shall conform to the provisions of current Caltrans Specifications Section 93, "Liquid Asphalt," and shall be Grade SC-70 unless otherwise directed by the Engineer.

#### **4-02.05 Paint Binder (tack coat)**

Paint binder (tack coat) shall be asphaltic emulsion Grade SS-1h, and shall conform to the requirements of Section 94, "Asphaltic Emulsions," of the Caltrans Specifications. The rate of application shall be approximately 0.05 to 0.15 gallon per square yard. The exact rate of application will be determined by the Engineer. A one-to-one (1:1) dilution of SS-1h in water shall be used. It is important that the water be added to the emulsion, NOT the emulsion to the water, to prevent premature breaking.

### **4-03 CONSTRUCTION**

At the request of the Engineer, as much liquid asphalt shall be applied to the prepared base as will soak in during a twenty-four (24) hour period without puddling. Sand cover shall be applied at driveways, intersections and to the roadbed surface where continuous traffic access must be maintained.

Pavement fabric shall be placed at locations indicated on the plans or as directed by the Engineer, and conform to Sections 39-4.03, "Pavement Reinforcing Fabric," of the Caltrans Specifications.

All asphalt concrete shall be placed in lifts not to exceed three inches (3"). Cold joints shall be tack coated prior to the adjacent overlay placement. Before compacting joints, all coarse aggregate in the overlapped material that has dislodged through raking shall be removed from the pavement surface and discarded. Compaction shall be a minimum of ninety-five percent (95%) of the laboratory maximum density of the asphalt concrete.

The Contractor shall assure that connections to existing or previously placed asphalt or concrete surfacing shall conform to the requirements of surface smoothness or the Contractor shall correct all these deficiencies to the satisfaction of the Engineer. The Engineer's decision whether the Contractor has met the requirements of surface smoothness shall be final.

The Contractor is required to provide adequate protection of the subgrade, aggregate subbase, aggregate base and other materials if the asphalt concrete pavement is not placed within a specified time as determined by the Engineer. Retesting of the subgrade, aggregate subbase, aggregate base or other material will be required and will be paid for by the Contractor, if the asphalt concrete pavement is not placed within a specified time as determined by the Engineer.

#### **4-03.01 Conforms**

Where back of walk, depressed curb or new pavement elevation is above adjacent existing asphalt concrete; asphalt concrete shall be placed on the existing to limits specified by the Engineer so as to provide a smooth conform. The existing asphalt concrete shall be thoroughly cleaned and a paint binder (tack coat) shall be applied to

vertical surfaces of Portland cement concrete or existing asphalt surfacing that will come in contact with the asphalt concrete conform.

Where back of walk, depressed curb or new pavement elevation is below adjacent existing asphalt concrete, the existing pavement shall be sawcut back to a point as specified on the drawings or by the Engineer so as to provide a smooth transition between existing asphalt and new construction. The areas so cut back shall be excavated and graded so as to provide for the placing of six inches (6") of aggregate base and two inches (2") of asphalt concrete. A prime coat of liquid asphalt SC-70 shall be applied to the aggregate base and a paint binder shall be applied to vertical surfaces of portland cement concrete and to cleaned surfaces of existing asphalt surfacing that will come in contact with the asphalt concrete conform. The asphalt concrete conform will be laid over the prime aggregate base and feathered over the existing asphalt concrete as required by the Engineer.

Headerboards shall be permanently installed along any unbordered edges of asphalt concrete driveway conforms. Headerboards shall conform to the requirements of Section 15, "Barricades, Guardrails and Headerboards," of these Standard Specifications.

#### **4-03.02 Asphalt Berms**

Asphalt berms, located as shown on the plans or as directed by the Engineer, shall conform to the details and dimensions shown on the plans and the Standard Plans.

The material used in constructing the asphalt berm shall have a maximum aggregate grading of ½ inch.

Asphalt berms shall be constructed using a self-propelled mechanical berm machine. The machine must be approved by the Engineer.

### **4-04 TESTING**

#### **4-04.01 General**

The Contractor in the presence of the Engineer or his designated representative shall conduct all testing. Cost for the testing shall be included in the unit price for the asphalt concrete. Any work that requires testing will not be accepted until the results have been reviewed and approved by the Engineer. The Contractor, at the Contractor's expense, shall perform any required retesting or material replacement because of test failure.

#### **4-04.02 Testing of Pavement Course**

The Contractor's shall provide continued testing of the compaction with the use of a nuclear gauge using test method ASTM D2950 to analyze the compaction operation of the new asphalt concrete. One test shall be conducted for each 5,000 square feet of patch and on each lift, at a location directed by the Engineer.

Any final density results between 93% and 98%, the City will pay 100% of the unit price for asphalt concrete patch. Any density results between 89% and 92.9% or over 98%, the City will reduce the payment to 80% of the unit price for the asphalt concrete patch. Any paved areas with density test results less than 89% will be rejected and the pavement must be replaced at the Contractor's expense.