

## **53.11 PRODUCTION OF ASPHALT CONCRETE PAVEMENT MATERIAL**

### **53.11.1 GENERAL**

The Work consists of producing asphalt concrete pavement material for pavement patching and other work. Asphalt concrete pavement shall consist of crushed aggregate, blend sand material as required and asphalt cement which is combined in a hot mix plant.

### **53.11.2 MATERIALS**

The Contractor shall supply asphalt binder in accordance with Specification 55.5, Supply of Asphalt, for the type and grade specified.

The Contractor shall supply aggregate in accordance with Specification 55.4, Supply of Aggregate.

The Contractor shall produce crushed aggregate in accordance with Specification 55.3, Aggregate Production and Stockpiling, for the designation and class of material specified.

The Contractor shall produce mixes conforming to mix type specified. The Contractor shall assume responsibility for all costs incurred in verifying mix properties.

### **53.11.3 PROCEDURE**

Asphalt concrete pavement (ACP) material of the Mix Type requested in the Work Order shall be produced to comply with the following:

**ASPHALT CONCRETE MIX TYPES AND CHARACTERISTICS**

Asphalt Concrete Mix Type	Class for Des 1 Agg.	% MF, -5000 (Min) (Note 1)	% Fractures +5000 (2 faces)* (Min)	Asphalt Cement Grade	Marshall Stability N (Min)	No. of Blows	Air Voids %	VMA % (Min.) by % Air Voids		Voids Filled with Asphalt %	Flow mm	Retained Stability % (Min.)
								3.5	4			
1	16	75	98 (one face) 90 *	150-200A	12 000	75	Note 5	13.0	13.5	65 to 75	2 to 3.5	70
2	16	70	70 *	150-200A	12 000	75	Note 5	13.0	13.5	65 to 75	2 to 3.5	70
3	16	40	60 *	150-200A	8 000	75	Note 5	13.0	13.5	65 to 75	2 to 3.5	70
4	12.5	50	60 *	150-200A	8 000	75	Note 5	13.5	14	65 to 75	2 to 3.5	70
5	12.5	Note 2	60 *	200-300A	8 000	75	Note 5	13.5	14	65 to 75	2 to 3.5	70
6	12.5	Note 2	60 *	200-300A	5 300	50	Note 5	13.5	14	65 to 78	2 to 4	70
7	12.5	Note 2	60 *	300-400A	5 300	50	Note 5,6	13.5	14	65 to 78	2 to 4	70
8	10	Note 2	60 *	Note 3	5 300	Note 4	Note 5	14.5	15	65 to 78	2 to 4	70

- Note 1 - The Percentage of Manufactured Fines in the -5000 Portion of the Combined Aggregate.
- Note 2 - All fines manufactured by the process of crushing shall be incorporated into the mix for Asphalt Mix Types 5, 6, 7 and 8.
- Note 3 - Use the same asphalt grade as for the lift above.
- Note 4 - Use the same number of blows as for the surface course.
- Note 5 - The Design Air Voids shall be chosen as the lowest value, within the range of 3.5 to 4.0% inclusive, such that all other mix design criteria are met.
- Note 6 - Air Void limits listed in Note 5 shall be reduced by 1% for community airports. VMA at 2.5% Air Voids shall be a minimum of 12.5%.
- Note 7 - Theoretical Film Thickness requirements shall be as follows depending upon the specified Mix Type and Design Air Voids. The Theoretical Film Thickness value shall be established in accordance with TLT-311.

**Minimum Theoretical Film Thickness Requirements (F m)**

<b>Design Air Voids (%)</b>	<b>Mix Types 1, 2, 3, 4, and 5</b>	<b>Mix Types 6 and 7</b>
4.0 and 3.9	6.0	6.5
3.7 and 3.8	6.1	6.6
3.5 and 3.6	6.2	6.7

General requirements for mix design:

- ! A minimum of four specimens shall be prepared at each asphalt content
- ! Theoretical maximum specific gravity shall be determined in duplicate for at least three asphalt contents
- ! Retained Stability after 24 hour soaking at 60E C to be run at the recommended design asphalt content.

**53.11.4 SAMPLING AND TESTING**

The Contractor may be required to provide the Engineer with a copy of the applicable mix design for the material supplied.

The Engineer may perform additional testing to verify that the asphalt concrete mix complies with the specifications.

**53.11.5 SCHEDULING OF WORK**

The Contractor shall provide asphalt concrete mix materials to coincide with pavement patching operations as shown in the Work Order.

**53.11.6 MEASUREMENT AND PAYMENT**

Payment for the production of asphalt concrete pavement including the supply of asphalt binder, producing crushed aggregate and blend sand, and processing the mix will be included in the unit price bid for the work item for which the material is being used.

Payment for the supply of aggregate will be made in accordance with Specification 55.4, Supply of Aggregate.

**53.11.7 WARRANTY**

There is no warranty period for this Work.