PERCENT MANUFACTURED FINES IN BITUMINOUS MIXTURES

1.0 SCOPE

1.1 This procedure is used to determine the amount of crushed material in the minus 5 000 μm fraction of the aggregate, combined at job mix formula gradation.

2.0 APPLICABLE DOCUMENTS

2.1 ATT-26 Sieve Analysis, 20 000 μm Minus

3.0 PROCEDURE

3.1 Determine the gradation for each component.

3.2 When the amount of manufactured fines in the reclaimed asphalt pavement is unknown, it will be assumed that the amount of manufactured fines in the minus 5 000 μm portion is 45% for 16 mm and 55% for 12.5 mm top size aggregates.

4.0 CALCULATE

4.1 The percentage of manufactured fines will be determined as follows:

$$\%\ MF,\text{-}5000 = \frac{(AP) + (BQ) + ((CR)\,x\,U)}{T}$$

Where:

% MF, -5000 is the percentage of manufactured fines in the minus 5000 μm sieve fraction of the total combined aggregate.

A is the proportion of the Coarse Crushed Aggregate expressed as a percentage of the total combined aggregate.

B is the proportion of the Extra Manufactured Fines Aggregate expressed as a percentage of the total combined aggregate.

C is the proportion of the Reclaimed Asphalt Pavement expressed as a percentage of the total combined aggregate.

P is the percentage passing the 5 000 μm sieve in the coarse Crushed Aggregate Stockpile.

Q is the percentage passing the 5 000 μm sieve in the Extra Manufactured Fines Aggregate Stockpile.

R is the percentage passing the 5 000 μm sieve in the Reclaimed Asphalt Pavement Stockpile.

T is the percentage passing the 5 000 μm sieve in the total combined aggregate (or proposed job mix formula gradation).

U the following estimates are used for determining the % manufactured fines in the –5 000 μm of the reclaimed asphalt concrete pavement.

- when 16 mm top size material is being reclaimed use 0.45
- when 12.5 mm top size material is being reclaimed use 0.55
- if % MF of original ACP is known add 7%

(e.g. Original MST design shows 56% MF use .56 + .07 = .63)

5.0 REPORT

5.1 The % MF is presented within the mix design summary report.