Test Procedure for

FINENESS MODULUS OF FINE AGGREGATE

TxDOT Designation: Tex-402-A

Effective Date: August 1999

1. SCOPE

1.1 This method determines the fineness modulus of concrete fine aggregate used in evaluation of natural and manufactured sands for portland cement concrete.

1.2 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

2. APPARATUS

2.1 *Apparatus*, specified in Tex-401-A.

2.2 *Standard U.S. sieves*, meeting the requirements of Tex-907-K, in the following sizes:

- 4.75 mm (No. 4)
- 2.36 mm (No. 8)
- 1.18 mm (No. 16)
- 600 µm (No. 30)
- 300 µm (No. 50)
- 150 µm (No.100).

3. PROCEDURE

3.1 Determine particle size distribution in accordance with Tex-401-A.

4. CALCULATIONS

4.1 Calculate Cumulative Percent Retained:

$$Cumulative\ Percent\ Retained = 100\,(Cumulative\ Mass\ Retained\ /\ Mass\ of\ Total\ Sample)$$

4.2 Calculate the Fineness Modulus (*FM*):

$$FM = (\sum Cumulative\ percent\ retained) / 100$$

4.3 Table 1 lists example amounts for discussion purposes.

Table 1—Amounts for Example Calculations

Sieve Size	Cum. Mass Retained	Cum. % Retained
4.75 mm (No. 4)	31.5 g	6.3
2.36 mm (No. 8)	99.1 g	19.8
1.18 mm (No. 16)	195.6 g	39.1
600 µm (No. 30)	306.7 g	61.3
300 µm (No. 50)	367.2 g	73.4
150 µm (No. 100)	482.8 g	96.5

(Dry Weight of Original Sample = 500.3 g)

Fineness Modulus = (6.3 + 19.8 + 39.1 + 61.3 + 73.4 + 96.5) / 100 = 2.964

Fineness Modulus = 2.96

5. REPORT

5.1 Report Fineness Modulus to the nearest 0.01.