Test Procedure for

RANDOM SELECTION OF BITUMINOUS MIXTURE SAMPLES

TxDOT Designation: Tex-225-F

Effective Date: August 2016

1.   SCOPE

1.1   Use this test method to randomly select points from which to sample loose bituminous mixtures at the plant and to determine roadway locations for obtaining hot-mix asphalt cores.

1.1.1   Use Part I to select sampling points of hot-mix asphalt mixtures and other materials randomly.

1.1.2   Use Part II to select pavement locations for the coring of hot-mix asphalt pavements.

1.2   Use the automated [Random Number worksheet](#) to generate and report all results.

1.3   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.

PART I—RANDOM SELECTION OF PRODUCTION SAMPLES

2.   SCOPE

2.1   Use this method to randomly select sampling points of hot-mix asphalt mixtures during plant production.

3.   PROCEDURE

3.1   Select the lot and sublot size as defined in the specification.

3.2   Use the Random Number worksheet to determine the random numbers for production sampling for the entire project.

Note 1—Random numbers must be a decimal unit between 0.001 through 0.999. The random number is A in Table 1.

3.3   Multiply the total mass of the sublot as determined in Section 3.1 by the random number (A) determined in Section 3.2.

3.4   Add the result from Section 3.3 to the mass at the beginning of the sublot to obtain the mass for the sampling location.

Note 2—This is the Production Location, as shown in Table 1.

4.   PRODUCTION SAMPLES EXAMPLE

4.1   Lot size = 2,000 tons (1814 Mg)

4.2   Sublot size = 500 tons (454 Mg)

Table 1—Production Samples Example

Sample	Sublot Mass	Random Number (A)	Sublot Location	Production Location
1	500 tons (454 Mg)	.515	258 tons (234 Mg)	258 tons (234 Mg)
2	500 tons (454 Mg)	.969	485 tons (440 Mg)	985 tons (894 Mg)
3	500 tons (454 Mg)	.532	266 tons (241 Mg)	1,266 tons (1149 Mg)
4	500 tons (454 Mg)	.709	355 tons (322 Mg)	1,855 tons (1684 Mg)

PART II—RANDOM SELECTION OF PAVEMENT LOCATIONS

5.   SCOPE

5.1   Use this method to randomly select pavement locations for the coring of hot-mix asphalt pavements.

6.   PROCEDURE

6.1   Determine the length and width of the sublot, after the sublot is completed.

6.2   Use the Random Number worksheet to determine the random numbers for the sublot length and width offset for the entire project.

Note 3—Random numbers must be a decimal unit between 0.001 through 0.999. The random numbers are A and B in Table 2.

6.3   Multiply the total length of the sublot by the sublot length random number (A) determined in Section 6.2, as shown in Table 2.

6.4   Add the result from Section 6.3 to the station number at the beginning of the sublot to obtain the station of the coring location.

Note 4—Make appropriate adjustments if the stationing is not continuous.

6.5   Multiply the width of the sublot by the sublot width offset random number (B) determined in Section 6.2, as shown in Table 2.

6.6 Measure the width offset from the right side of the sublot completed facing in the direction of paving.

    Note 5—Adjust the sublot width location by no more than necessary, if the sublot width offset is within 2 ft. of a longitudinal joint or pavement edge.

6.7 Repeat Sections 6.3 through 6.6 to determine a new core location.

7. PAVEMENT CORE LOCATION EXAMPLE

7.1 Beginning Station = 0 + 00 ft. (0 + 000.000 m)

7.2 Lot size = 6,562 ft. (2000 m)

7.3 Sublot size = 1,640 ft. (500 m)

Table 2—Pavement Coring Location Example

Sample	Sublot Length	Random Number (A)	Sublot Location	Station Number	Sublot Width	Random Number (B)	Width Offset
1	1,640 ft. (500 m)	.035	57.4 ft. (17.5 m)	0 + 57.4 ft. (0 + 17.5 m)	12 ft (3.66 m)	.175	2.1 ft. (0.64 m)
2	1,640 ft. (500 m)	.392	642.9 ft. (196 m)	22 + 82.9 ft. (6+ 96.0 m)	12 ft (3.66 m)	.694	8.3 ft. (2.53 m)
3	1,640 ft. (500 m)	.970	1,590.8 ft. (485 m)	48 + 70.8 ft. (14 + 85.0 m)	12 ft (3.66 m)	.692	8.3 ft. (2.53 m)
4	1,640 ft. (500 m)	.932	1,528.5 ft. (466 m)	64 + 48.5 ft. 19 + 66.0 m)	12 ft (3.66 m)	.206	2.5 ft. (0.75 m)

8. ARCHIVED VERSIONS

8.1 Archived versions are available.