

ALDOT-248-76
**METHOD OF TEST FOR MEASURING THE DEPTH OF GROOVES IN CONCRETE
PAVEMENTS AND BRIDGE DECKS WITH A TIRE TREAD DEPTH GAGE**

1. Scope

- 1.1. This method of test describes the procedure for sampling, preparing and measuring the depth of grooves in bridge decks, concrete pavements and ramps using a Tire Tread Depth Gage.
- 1.2. This method of test can measure the depth of grooves in concrete pavements produced by the following methods: Tine Finish, Broom Finish and Pavement Grooving.

2. Apparatus

- 2.1. Tire Tread Depth Gage - A gage, calibrated in increments of 1/32 in. (1 mm) and capable of measuring to a depth of
- 2.2. ½ in (13 mm) shall be used.
- 2.3. Miscellaneous Equipment - Hand broom or brush, 12 in (300 mm) ruler, 100 ft. (50 m) tape measure and notebook.

3. Sampling Procedure for Securing Test Area

- 3.1. The lot size for bridge decks shall be the lengths of the span by the width of the lane and lanes in one direction.
- 3.2. The lot size for concrete pavements shall be a minimum of 5000 yds² (4200 m²) to a maximum of 10000 yds² (8400 m²) in one direction. If the contractor's production is below the minimum, the lot size shall be the yd² (m²) of pavement placed.
- 3.3. The lot size for ramps or separate lanes connecting with cross streets shall be the yd² (m²) of pavement placed in one direction.
- 3.4. A lot shall consist of five approximately equal sublots. Within each subplot, one test area shall be randomly secured in accordance with ALDOT-210.

4. Preparing the Test Area

- 4.1. Brush all loose material from the area to be measured.

5. Measuring the Depth of the Grooves

- 5.1. Measure ten grooves in a straight line perpendicular to the grooves; starting with the point that was randomly secured in Section 3.5.
- 5.2. Place the Tire Tread Depth Gage on the groove to be measured and firmly seat it to the surface. Make sure that the needlepoint will fall in the middle of the groove.

5.3. Depress the needlepoint and determine the depth by reading the scale attached to the gage.

5.4. Repeat the procedures described in Sections 5.2 and 5.3 for the nine remaining grooves.

6. Calculations

6.1. Calculate the average groove depth for each of the five sublots

6.2. Calculate the average groove depth for the lot.

7. Report

7.1. The average groove depth for the lot shall be reported in increments of 1/32 in. (1 mm).

Illustrative Example Number 1

					→	230 yd. (m)	←
Lot 2 10,000 yds ² (8400 m ²)	SL5	SL4	SL3	SL2	SL1 2,000 yds ² (1680 m ²)		
Lot 3	Lot 4						

Assume a contractor placed 40,000 yd.² (m²) of separated highway consisting of reinforced concrete pavement 24 ft (7.5 m) wide on each side of a traffic separator.

In this case, the pavement can be divided into four lots. Each lot will have an area of 10,000 yds² (8400 m²).

Each lot must then be divided into five approximately equal sublots. Each subplot will have an area of 2000 yds² (750 ft. x 24 ft.), 1680 m² (230 m by approximately 7.5 meters).

Assume beginning station is 30 + 48

Use Random Number Table in ALDOT-210 to obtain random decimal fractions. These values shall be multiplied by the length and width of the lanes of each subplot to obtain the coordinates of the sample location measured from the starting point of each subplot.

Sublot #1

Longitudinal Coordinate = 0.47 x 750 ft. (230) = 352.5 (108.1 m)

Transverse Coordinate = R 0.20 x 24 ft. (7.5)= 5.0 ft. (R 1.5 m)

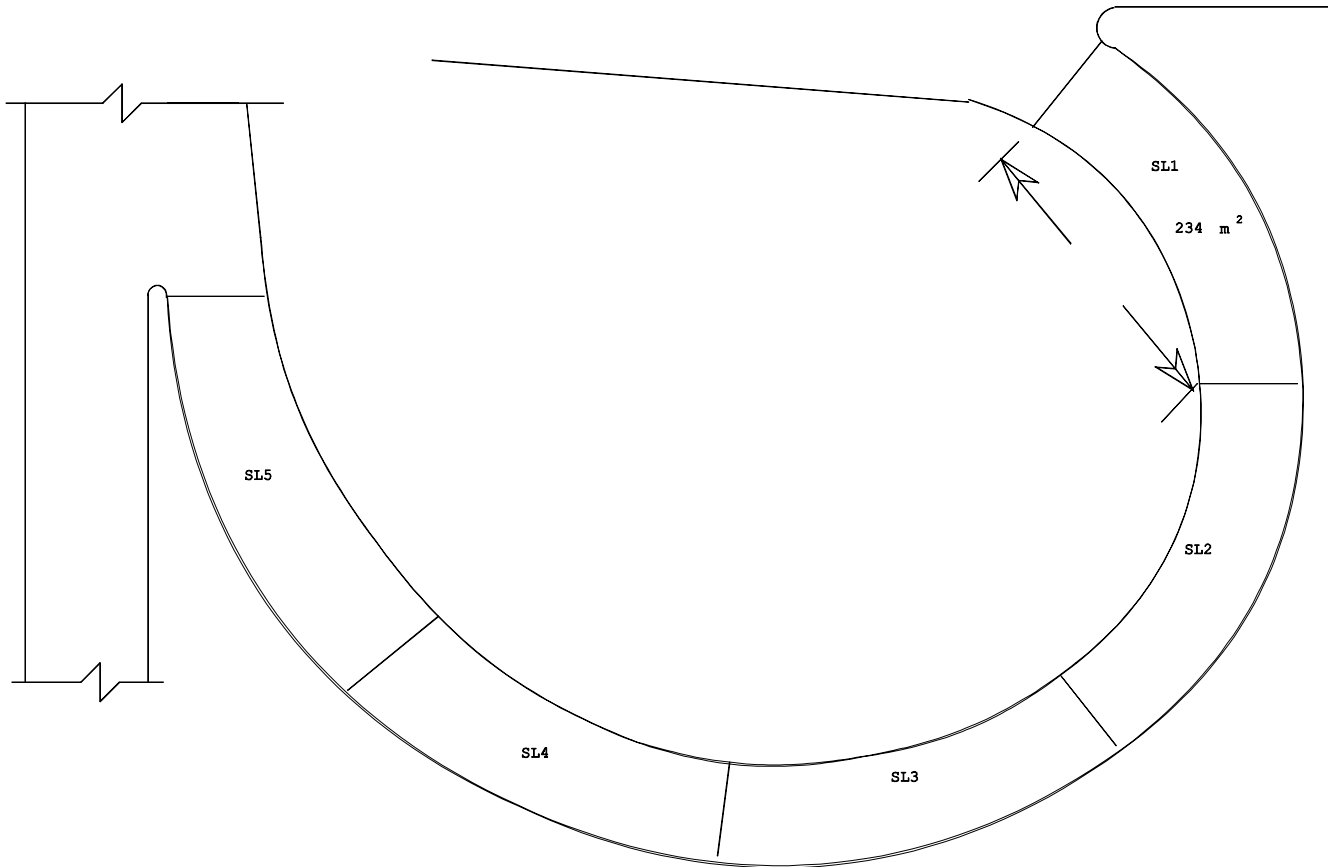
Sample Location = Sta. 30 + 48 plus 108.10 = Sta.31 + 56.1

Measure 5.0 ft. (1.5 m) from right edge of lane.

Calculate the coordinates for the remaining sublots.

Be sure to go through all numbers in the table before using the same numbers over.

Illustrative Example No. 2



Assume a contractor places a ramp having an area of 1400 yds² (1170 m²).

In this case, the area of the ramp is the lot size. The lot shall begin where the uniform width starts and end at a point with a uniform width.

The lot must then be divided into five approximately equal sublots. Each subplot will have an area of 280 yds², 234 m² (58.5 m by 4 m).

Measurements for the sublots and coordinates shall be made along the inner edge.

The transverse coordinate shall be measured on a line perpendicular to the sides of the ramp at the longitudinal coordinate point.

See Illustrative Example No. 1 for example of how to obtain the coordinates of the sample location.