

SPECIAL NOTE FOR ACCEPTANCE OF JPC PAVEMENT THICKNESS

This Special Note will apply where indicated on the plans or in the proposal. Section references herein are to the Department's 2008 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. This Special Note covers the requirements for thickness of JPC pavement. Contrary to Subsection 501.03.21 and 501.05.01, the Department will accept JPC pavement thickness from cores based on a percent within limits (PWL) per lot. The PWL will not apply for projects involving less than 2,500 square yards of pavement per bid item. For quantities less than 2,500 square yards of pavement per bid item, acceptance will be in accordance with 3.1.2 of this note.

2.0 MATERIALS. Reserved

3.0 CONSTRUCTION.

3.1 Pavement Thickness. The Engineer will determine random sampling locations according to KM 64-113. Obtain 8 cores per lot at the randomly selected locations under the observance of the Engineer. Cut cores with a nominal diameter of not less than 4 inches. Take all cores after any corrective grinding. Provide the cores to the Engineer immediately. The Department will measure cores according to KM 64-308, taking 5 measurements for all cores. Furnish all tools, labor, and materials for cutting samples and filling the cored hole. Fill core holes with a non-shrink grout approved by the Engineer within one day after sampling.

When a core thickness is deficient by one inch or more, the Department will not accept the pavement. Remove and replace the deficient pavement. Take another random core from the subplot as the Engineer directs to determine the PWL.

3.1.1 Lot Size. The Department will divide each pavement bid item into lots of 6,000 linear feet of paved width. The lot will be divided into 8 sublots of equal length (750 feet). Take a core from each subplot for determination of pavement thickness.

For bid items with over 2,500 square yards and less than 6,000 linear feet of paved width, project area will be divided into 4 equal sublots for determination of PWL.

For a remainder lot of less than 3,000 feet, the Department will add the quantity of pavement to the previous lot and the 8 sublots will be equally divided over the increased length. For a remainder lot of 3,000 feet or greater, the Department will divide the remainder lot into 8 equal sublots for acceptance.

3.1.2 Small Quantities and Miscellaneous Areas. For quantities less than 2,500 square yards per bid item and for miscellaneous areas, the acceptance may be based on either of the following:

- 1) Engineer's inspection of the base grade elevation in relation to the forms, or
- 2) Engineer's monitoring of the yield rate and visual inspection of the placement,

Miscellaneous areas are entrances and tapers less than 10 feet wide. Furnish cores for areas where there are indications of deficient thickness as the Engineer directs. Replace areas found deficient by one inch or more at no cost. The Engineer will evaluate areas found deficient by 0.50 to 0.99 inches according to Subsection 105.04 for acceptance.

3.1.3 Statistical Evaluation. The Department will use the Variability-Unknown/Standard Deviation Method to determine the estimate percentage of the lot that is within the specification limits (PWL). The Engineer will calculate the lower quality index (QL)

$$QL = \frac{\text{Average} - LSL}{s}$$

Where: Average = the arithmetic mean of the test values. The average will be determined to the nearest tenth of an inch.
 LSL = the specified thickness minus 0.20 inch.
 s = Standard Deviation = $[\text{Sum (Individual Measurement - Average)}^2 / (n-1)]^{1/2}$, determined to 2 decimal places.
 N = Number of measurements.

QL will be determined to 2 decimal places.

For calculation of PWL, core thickness greater than 0.75 inches more than the specified thickness will be rounded down to the specified thickness plus 0.75 inch.

Percent Within Limits (PWL) will be determined by the attached tables with QL, for n = the number of tests for the Lot. PWL will be determined to 2 decimal places.

For all calculations round down when the last significant digit is followed by a number less than 5 and round up when the last significant digit is followed by a number equal to or greater than 5.

4.0 MEASUREMENT. The Department will not measure for payment any work or materials required to supply the cores or grout the holes and will consider it incidental to JPC Pavement.

5.0 PAYMENT. The Department will base acceptance of each lot of material on the percentage of material within specification limits (PWL). The following equation will determine the pay factor for thickness: $PF \% = 52.5 + 0.5 \text{ PWL}$. The Department will round the Pay Factor to 2 decimal places as noted above.

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PERCENT WITHIN LIMITS ESTIMATION TABLE
Variability - Unknown Procedure
Standard Deviation Method
Sample Size 4

Q	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	50.00	50.33	50.67	51.00	51.33	51.67	52.00	52.33	52.67	53.00
0.1	53.33	53.67	54.00	54.33	54.67	55.00	55.33	55.67	56.00	56.33
0.2	56.67	57.00	57.33	57.67	58.00	58.33	58.67	59.00	59.33	59.67
0.3	60.00	60.33	60.67	61.00	61.33	61.67	62.00	62.33	62.67	63.00
0.4	63.33	63.67	64.00	64.33	64.67	65.00	65.33	65.67	66.00	66.33
0.5	66.67	67.00	67.33	67.67	68.00	68.33	68.67	69.00	69.33	69.67
0.6	70.00	70.33	70.67	71.00	71.33	71.67	72.00	72.33	72.67	73.00
0.7	73.33	73.67	74.00	74.33	74.67	75.00	75.33	75.67	76.00	76.33
0.8	76.67	77.00	77.33	77.67	78.00	78.33	78.67	79.00	79.33	79.67
0.9	80.00	80.33	80.67	81.00	81.33	81.67	82.00	82.33	82.67	83.00
1.0	83.33	83.67	84.00	84.33	84.67	85.00	85.33	85.67	86.00	86.33
1.1	86.67	87.00	87.33	87.67	88.00	88.33	88.67	89.00	89.33	89.67
1.2	90.00	90.33	91.67	91.00	91.33	91.67	92.00	92.33	92.67	93.00
1.3	93.33	93.67	94.00	94.33	94.67	95.00	95.33	95.67	96.00	96.33
1.4	96.67	97.00	97.33	97.67	98.00	98.33	98.67	99.00	99.33	99.67
1.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

PERCENT WITHIN LIMITS ESTIMATION TABLE
Variability - Unknown Procedure
Standard Deviation Method
Sample Size 8

Q	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	50.00	50.38	50.76	51.14	51.51	51.89	52.27	52.65	53.03	53.41
0.1	53.78	54.16	54.54	54.92	55.29	55.67	56.04	56.42	56.79	57.17
0.2	57.54	57.92	58.29	58.66	59.03	59.41	59.78	60.15	60.52	60.89
0.3	61.25	61.62	61.99	62.35	62.72	63.08	63.45	63.81	64.17	64.53
0.4	64.89	65.25	65.61	65.96	66.32	66.67	67.03	67.38	67.73	68.08
0.5	68.43	68.78	69.13	69.47	69.82	70.16	70.50	70.84	71.18	71.52
0.6	71.85	72.19	72.52	72.85	73.18	73.51	73.84	74.17	74.49	74.81
0.7	75.14	75.46	75.77	76.09	76.41	76.72	77.03	77.34	77.65	77.96
0.8	78.26	78.56	78.86	79.16	79.46	79.76	80.05	80.34	80.63	80.92
0.9	81.21	81.49	81.77	82.05	82.33	82.61	82.88	83.15	83.43	83.69
1.0	83.96	84.22	84.49	84.75	85.00	85.26	85.51	85.76	86.01	86.26
1.1	86.51	86.75	86.99	87.23	87.46	87.70	87.93	88.16	88.39	88.61
1.2	88.83	89.06	89.27	89.49	89.70	89.91	90.12	90.33	90.53	90.74
1.3	90.94	91.13	91.33	91.52	91.71	91.9	92.09	92.27	92.45	92.63
1.4	92.81	92.98	93.15	93.32	93.49	93.65	93.81	93.97	94.13	94.29
1.5	94.44	94.59	94.74	94.88	95.03	95.17	95.31	95.44	95.58	95.71
1.6	95.84	95.97	96.09	96.21	96.33	96.45	96.57	96.68	96.79	96.90
1.7	97.01	97.11	97.21	97.31	97.41	97.51	97.60	97.69	97.78	97.87
1.8	97.96	98.04	98.12	98.20	98.28	98.35	98.42	98.49	98.56	98.63
1.9	98.69	98.76	98.82	98.88	98.93	98.99	99.04	99.09	99.14	99.19
2.0	99.24	99.28	99.33	99.37	99.41	99.45	99.48	99.52	99.55	99.58
2.1	99.61	99.64	99.67	99.7	99.72	99.74	99.77	99.79	99.81	99.83
2.2	99.84	99.86	99.87	99.89	99.90	99.91	99.92	99.93	99.94	99.95
2.3	99.96	99.96	99.97	99.98	99.98	99.98	99.99	99.99	99.99	100.00