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IA Checklist OHD L-14 Method 2 – In-Place Density of asphalt mixture by the Nuclear Method

Procedure		Р	F	NA
1	Verbal: Explain warming up of gauge.			
2	Did Technician place gauge on standard block correctly.			
3	Did Technician take standard count and record the counts.			
4	Verbal: Where and when should standard counts be taken? Answer: Standardization of the gauge on the reference standard is required at the start of each day's use and a permanent record of these data shall be retained. Standard counts should be taken in the same environmental conditions as the actual measurement counts.			
5	The standardization shall be performed with the gauge at least 10 m (30 Ft.) away from other radioactive sources and clear of large masses or other items which may affect the reference count rates.			
6	Test sites closer than 24" from any vertical mass or less than 12" from a vertical pavement edge, use gauge manufacturer's correction procedure.			
7	Enter unit weight of mix, in pcf, into gauge. (Marshall)			
8	The Gauge is at least 3 m (10 Ft.) away from large objects. Other radioactive sources must not be within 10 m (30 Ft.).			
9	Have the Tech verbally explain the use of a filler material between gauge and the surface. Answer: Maintain maximum contact between the base of the gauge and the surface of the material under test. Use filler material to fill surface voids. Spread a small amount of filler material over the test site surface and distribute it evenly. Strike off the surface with a straightedge (such as a lathe or flat-bar steel) to remove excess material. Filler Material is defined as: Fine-graded sand from the source used to produce the asphalt pavement or other acceptable materials.			
10	Alternate Method No. 1—90-Degree Rotation: Place the gauge on the test site perpendicular to the direction of travel of the rollers. Using a crayon or chalk, mark the outline or footprint of the gauge. Then place the probe in the backscatter position. Take a 1-min test, and record the (wet) density reading. (see Figure 1)			
11	Rotate the gauge 90 degrees centered over the original footprint (see Figure 1). Mark the outline or footprint of the gauge. Take another 1-min test and record the (wet) density reading.			
12	If the difference between the two 1-min tests is greater than 40 kg/m ₃ (2.5 lb/ft ₃), retest in both directions. If the difference of the retests is still greater than 40 kg/m ₃ (2.5 lb/ft ₃), test at 180 and 270 degrees.			

Procedure		Р	F	NA
13	The density reported for each test site shall be the average of the two			
14	Alternate Method No. 2—180-Degree Rotation: Place the gauge on the test site parallel to the direction of travel of the rollers. Using a crayon or chalk, mark the outline or footprint of the gauge. Then place the probe in the backscatter position. Take a 1-min test and record the (wet) density reading. (see Figure 2) Rotate the gauge 180° centered over the original footprint (see Figure 2). Take			
16	another 1-min test and record the (wet) density reading. If the difference between the two 1-min tests is greater than 40 kg/m ₃ (2.5 lb/ft ₃), retest in both directions.			
17	The density reported for each test site shall be the average of the two individual 1-min (wet) density readings.			
18	<u>Alternate Method No. 3:</u> Place the gauge on the test site parallel to the direction of travel of the rollers. Using a crayon or chalk, mark the outline or footprint of the gauge. Then place the probe in the backscatter position. Take a 4-min test and record the (wet) density reading.			
19	Verbal: Does the gauges need to cool between measurements if surface is hot? Answer: Yes			
20	How many tests are required to do a correlation? Answer: The initial correlation must include at least 10 core locations prior to the possible elimination of specific core sites as defined in T 355 Appendix X 1. The final correlation must have a minimum of 5 and no more than 10 core locations. With in-place nuclear gauge readings corresponding for each core location.			
21	How often should you do a new correlation? Answer: The correlation procedure must be repeated if there is a new job mix formula. Adjustments to the job mix formula beyond tolerances established in the contract documents will constitute a new job mix formula. A correlation factor established using this procedure is only valid for the particular gauge and in the mode and at the probe depth used in the correlation procedure. If another gauge is brought onto the project, it shall be correlated using the same procedure. Multiple gauges may be correlated from the same series of cores if done at the same time.			

Remarks:

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Figure 1—Footprint of the Gauge Test Site (Gauge is Rotated 90 Degrees between Readings)

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Figure 2—Footprint of the Gauge Test Site (Gauge is Rotated 180 Degrees between Readings)