

**Colorado Procedure 58-23**  
*Standard Method of Test for*  
**Detecting and Measuring**  
**Temperature Segregation of HMA**

**1. SCOPE**

- 1.1 This method describes the procedure for detecting and measuring temperature segregation of HMA using a handheld temperature device.

**2. REFERENCED DOCUMENTS**

- CP 81 Density and Percent Relative Compaction of In-Place Bituminous Pavement by the Nuclear Method

**3. APPARATUS**

- 3.1 *Handheld Temperature Device* – An infrared temperature gun or infrared camera that is capable of measuring in one degree or finer increments between the temperatures of 150° to 400° F. For best clarity in readings, it is suggested that the temperature gun has a distance-to-spot size ratio (D:S) of 30:1 or greater.
- 3.2 Paint, grease crayon, or some other tool to mark locations to be tested for density.
- 3.3 Tape measure, long enough to span the width of the paving area.

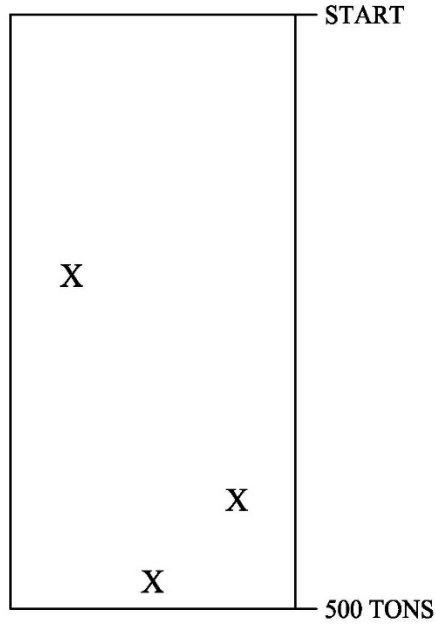
**4. PROCEDURE**

- 4.1 Mark the start of the area that will be examined. The tonnage of the area can be calculated in length by using 110 lbs/yd<sup>2</sup>/inch or can be found by tracking asphalt tickets. See Figure 58-1.
- 4.2 Scan the paving area with the hand-held temperature device looking for an area that is 25°F cooler than other areas across the width of the mat. **Do not stand on or walk on the paving area.** Stand adjacent to the paving area, behind the paver but ahead of the breakdown roller, and scan slowly across the width of the mat excluding the outer one foot on each side of the mat. Move three feet along the pavement edge longitudinally and repeat scanning. Repeat as needed.
- 4.3 If an area is 25°F cooler than other areas across the width of the mat, mark the location on the edge of the mat and use a tape measure to locate the cooler area. Record on CDOT Form 1346.
- 4.4 Following finish rolling, locate the cooler area and find the density of the area per CP 81. Record on CDOT Form 1346.

**5. REPORT**

- 5.1 CDOT Form 1346, HMA Segregation Data, will serve as the report document.

In Figure 58-1 below, the tester performed the temperature segregation check correctly. A start was established and 500 tons were checked for temperature segregation. Three cool areas were found in the 500-ton temperature segregation check.



**Figure 58-1: Temperature Segregation Study Done Correctly**

In Figure 58-2 below, the tester did not perform the temperature segregation check correctly. A start was established and the tester went about 400 yards finding just two cool areas. He then restarted the temperature segregation check at the second cool area by establishing a new 500-ton test section. This resulted in finding five cool areas over the next 500 tons. This is incorrect.

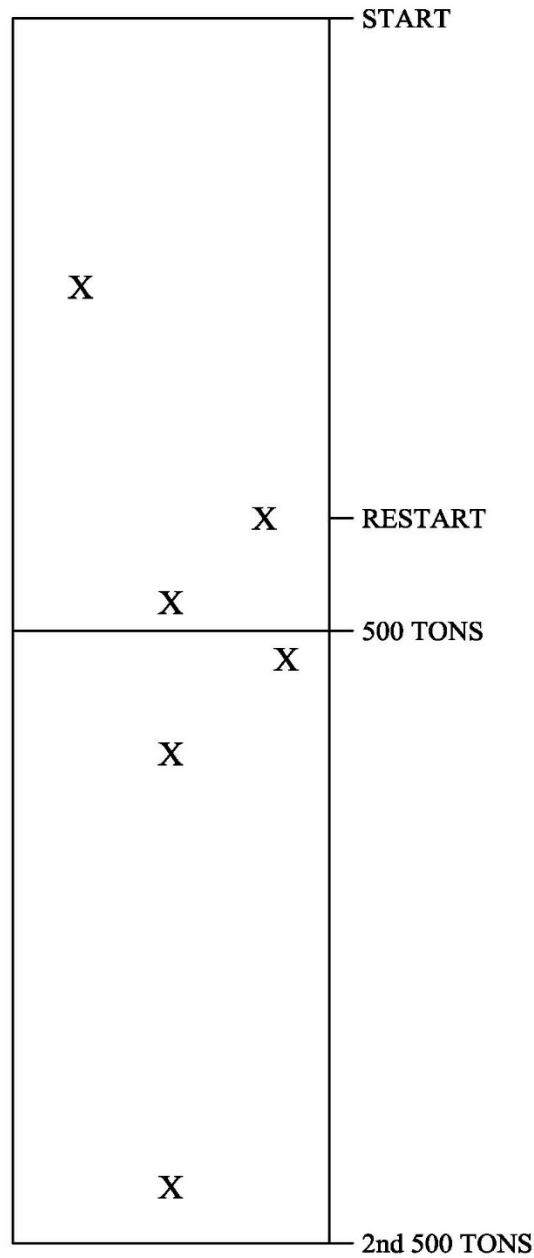


Figure 58-2: Temperature Segregation Study Done Incorrectly

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