

**ALDOT-424-16**  
**MATERIAL REMIXING DEVICE (MRD) EVALUATION PROCEDURE**

**1. Scope**

- 1.1 This procedure provides the method for evaluating and approving particular models of Material Remixing Devices (MRDs) that are used in placing Hot Mix Asphalt (HMA) or Warm Mix Asphalt (WMA) mixtures where the use of an MRD is required.

**2. Reference Documents**

- 2.1 ALDOT Procedures
- 389 Evaluation of Segregated Areas in Hot Mix Asphalt Pavement

**3. Evaluation Team**

- 3.1 The Evaluation Team will consist of the Road Construction Engineer and an assistant, and the State Bituminous Engineer and an assistant. The Area Construction Engineer and Area Materials Engineer, or their assistants, will also be present during the evaluation.
- 3.2 If any of the aforementioned personnel are not available, a substitute, agreeable to the Evaluation Team, may be appointed by the person not available.

**4. Request for Evaluation**

- 4.1 The Company requesting the MRD evaluation shall provide a written proposal to the State Construction Engineer. The proposal shall include the date of the evaluation, information regarding the MRD, the project on which the evaluation is proposed, the type of mix, delivery temperature, and paving speed to be used during the evaluation, the name of the Contractor that will operate the MRD, and the plant location.

The State Construction Engineer will review the proposal and respond to the MRD Company.

- 4.2 If the project on which the evaluation is proposed requires the use of an MRD, the prime Contractor on that project shall write the State Construction Engineer and request a waiver of the use of a pre-approved MRD in exchange for the use of the proposed MRD on a test basis. The State Construction Engineer will respond to the prime Contractor. This waiver may or may not be allowed.
- 4.3 The MRD Company will be responsible for all coordination and arrangements with the prime Contractor and, if applicable, the Subcontractor that will operate the MRD.

## 5. Evaluation Requirements

- 5.1 The MRD evaluation shall be conducted during the placement of HMA or WMA mixtures of 1" {25 mm} maximum (3/4" {19 mm} nominal) or 3/4" {19 mm} maximum (1/2" {12.5 mm} nominal) aggregate size.

- 5.2 The proposed project shall have available a minimum of 4,000' of continuous length with a 12' minimum paving width.

*Note: A continuous 2,000' (600 meters) segment will be evaluated from the required 4,000' length.*

- 5.3 During the evaluation, the paver speed shall be within 5 feet per minute of the paver speed proposed by the Contractor that will operate the MRD.

## 6. Evaluation Procedure

- 6.1 The Evaluation Team will use an infrared camera to view the mat and capture thermal images behind the spreader.
- 6.2 Thermal images of the mat will be captured at approximately 25' {7.5 meter} stations immediately behind the spreader for a continuous length of approximately 2,000' {600 meters}.

Additional thermal images of the mat may be captured at any time when deemed appropriate by the Evaluation Team.

- 6.3 The maximum temperature differential will be determined for each station by analyzing a transverse line segment across the width of the mat.
- 6.4 Using these maximum temperature differentials, the overall average temperature differential will be calculated for the entire 2,000' {600 meters} evaluation section.
- 6.5 An overall average temperature differential of no more than 18°F {10 °C} is required before the evaluation will be considered successful; however, if for any reason, the maximum temperature differential at any station(s) is determined to be excessive, even if the overall average temperature differential is no more than 18°F {10 °C}, the evaluation may be deemed unsuccessful.
- 6.6 The Evaluation Team will visually evaluate the finished surface of the roadway for segregation. If segregation is suspected, cores will be cut and tested in accordance with ALDOT-389. Testing will be performed by the Department. Traffic control and cutting of cores will be at the MRD Company's expense. Any segregation found to be unacceptable as defined by ALDOT-389 may be cause for the evaluation to be considered unsuccessful.
- 6.7 For the purposes of this evaluation, any segregation (temperature or aggregate), whether or not related to the operation of the MRD, may be cause for the evaluation to be considered unacceptable.

## **7. Evaluation Conclusion**

- 7.1 The Evaluation Team will recommend approval or disapproval of the MRD to the State Construction Engineer. The State Construction Engineer will notify the MRD Company of the final decision.