

Illinois Department of Transportation
Bureau of Materials and Physical Research
**APPROVED / PROVISIONAL LIST OF
TECHNOLOGIES FOR PRODUCTION OF WARM MIX ASPHALT (WMA)**
December 16, 2011

BDE Permissive Use Specification for Warm Mix Asphalt (effective 1/1/2012)

APPROVED TECHNOLOGIES LIST FOR WMA TECHNOLOGIES
December 16, 2011

Company	WMA Technology		Date Approved
	Mechanical	Additive	

PROVISIONAL TECHNOLOGIES LIST FOR WMA TECHNOLOGIES
December 16, 2011

Company	WMA Technology		Date Provisionally Accepted
	Mechanical	Additive	
Astec Industries, Inc. 1725 Shepherd Road Chattanooga, TN 37421	Generation One (G1) of the Astec® Double Barrel Green System		12/2011
GENCOR INDUSTRIES, INC. 5201 North Orange Blossom Trail Orlando, Florida 32810	Gencor Ultrafoam GX™		12/2011
MAXAM Equipment, Inc. 1575 Universal Avenue Kansas City, MO 64120	MAXAM AQUABlack®		12/2011
Stansteel 12711 Townepark Way Louisville, KY, 40243	Stansteel Accu•Shear™		12/2011
Stansteel 12711 Townepark Way Louisville, KY, 40243	Stansteel Eco•Blend™		12/2011
Terex Corporation 200 Nyala Farm Road Westport, CT 06880 USA	Terex® Warm Mix Asphalt System		12/2011
MeadWestvaco 501 South 5th Street Richmond, VA 23219-0501		EVOTHERM™	12/2011
Sasol Wax North America Corporation 21325B Cabot Blvd Hayward, California 94545		SASOBIT®	12/2011
Akzo Nobel Surfactants 525 West Van Buren Street, Chicago, Illinois 60607-3823		REDISSET™	12/2011

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Effective: December 16, 2011
Revised May 2, 2012

A. Scope

Before a Warm Mix Asphalt Foaming Technology (Mechanical Foamer or Additive (chemical, mineral, or organic)) (WMA Technology) is placed on the APPROVED LIST OF TECHNOLOGIES FOR PRODUCTION OF WARM MIX ASPHALT list (APPROVED LIST), it will be evaluated by the Bureau of Materials and Physical Research. The evaluation period shall be no less than two calendar years from the date of initial construction of the test sections, subject to the discretion of the Engineer. During the evaluation period the WMA Technology may be listed on the PROVISIONAL LIST OF TECHNOLOGIES FOR PRODUCTION OF WARM MIX ASPHALT list (PROVISIONAL LIST). A WMA Technology shall be used on two asphalt paving contracts, throughout the state. Contracts proposed for evaluating a WMA Technology shall have a minimum of 2,000 tons of HMA/WMA surface mix scheduled for placement. Test sections shall be placed over a total of four (4) lane miles on the contract. A test section is defined as 2 lane miles of WMA Technology surface mix, with a 2 lane mile HMA control section adjacent to the trial section. Trial sections may be split in half, but each WMA trial section shall have a HMA control section placed adjacent to it. WMA Technologies placed on the PROVISIONAL LIST, may be used to produce WMA for contracts not associated with the evaluation of the particular WMA Technology at the discretion of the Engineer. The Engineer shall notify the Central Bureau of Construction (Construction) and the Bureau of Materials and Physical Research (BMPR) of the use of the WMA Technology.

A producer wishing to submit their WMA Technology for consideration shall submit the WMA Technology to the Department in the following manner:

1. The producer shall have a Contractor submit a written request to the District Materials Engineer to use the WMA Technology on a contract. A minimum of two contracts are needed for a complete evaluation. The contract shall require a minimum of 2,000 tons of HMA/WMA mainline surface mix to be placed on the roadway. The request shall include the contract number, job identification, HMA mix design number (used for a control section), WMA Technology name, location of the HMA control section, location of the WMA Technology section, and additional contact information.
2. Upon approval of the proposal by the District Materials Engineer, the proposal shall be submitted to the Construction (Field Engineers) as well as the BMPR (Engineer of Tests) for

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evaluation.

3. Once accepted by both Construction and BMPR, the Contractor shall notify Joe Rechner, BMPR HMA Laboratory Manager, 48 hours before the start of production of the HMA or WMA surface mix, that the Contractor will be producing HMA/WMA for the referenced contract.
4. After successful completion of Hamburg Wheel Tracking Device testing, and approval by Construction and BMPR, the WMA Technology will be added to the PROVISIONAL LIST. The WMA Technology will be moved to the APPROVED LIST after completion of the second contact.
5. At the start of production, either HMA or WMA, after 200 tons of mix have been produced; the Contractor shall obtain enough mix to compact four (4) gyratory pucks of HMA, as well as four (4) gyratory pucks of WMA made using the WMA Technology. The loose WMA mix shall be aged for not more than 2 hours at $270\pm 5^{\circ}\text{F}$ prior to gyration. The puck shall be compacted at the Contractor's field laboratory using a gyratory compactor. Pucks shall be compacted to 7% voids and 63 mm high. The pucks shall be turned over to a representative of BMPR or the District for delivery to BMPR. The District may also require additional loose mix for mix design verification. The District materials laboratory shall provide lab test results gathered during mix design verification to BMPR

B. Evaluation Procedure

Gyratory pucks obtained from the contractor will be evaluated using Hamburg Wheel Tracking Device according to IL Mod AASHTO T324. The tests will be conducted at the BMPR HMA Laboratory. The Contractor shall submit tensile strength results according to IL Mod AASHTO T283 to BMPR for evaluation. Test results shall meet the criteria listed in the Warm Mix Asphalt BDE Special Provision (effective January, 2012)

Hamburg Wheel Tracking Device test results will be evaluated for the WMA Technology sections and HMA control sections. The evaluation will also consider volumetric properties of each mix.

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In addition to Hamburg Wheel Tracking Device performance, a visual evaluation will be conducted using the automated data collection vehicles. The vehicles will collect digital video images, rut measurements, and IRI data over both the HMA and WMA Technology sections. The evaluation will be conducted over a two year time period. Analysis of the Hamburg Wheel Tracking Device data, mix volumetric properties and data gathered from the automated data collection vehicles will be used to determine acceptance of WMA Technology for placement on the approved technology list.