

Illinois Department of Transportation
Bureau of Materials and Physical Research
**APPROVED / QUALIFIED PRODUCER LIST OF
TECHNOLOGIES FOR PRODUCTION OF WARM MIX ASPHALT (WMA)**
February 28, 2014

This list supersedes the April 15, 2013 list.
BDE Specification for Warm Mix Asphalt (effective 1/1/2012)

For information regarding new product submittal, click the “New Submittal” bookmark to the left.

APPROVED TECHNOLOGY LIST FOR WMA TECHNOLOGIES

Company	Mechanical
AESCO/Madsen 1531 20 th Street N.W. Auburn WA 98001	Eco-Foam II
ALmix 13333 Hwy 24 West Fort Wayne IN 46804	ALmix WarmWare
Astec Industries, Inc. 1725 Shepherd Road Chattanooga TN 37421	Astec® Double Barrel Green System
East Texas Asphalt Co., Ltd. 204 East Burke Avenue Lufkin TX 75901	HydroFoam IEQ
Gencor Industries, Inc. 5201 North Orange Blossom Trail Orlando, Florida 32810	Gencor Ultrafoam GX™
Herman Grant Company 1100 Ashmore Avenue Chattanooga TN 37415	HGRANT Warm Mix System
MAXAM Equipment, Inc. 1575 Universal Avenue Kansas City MO 64120	MAXAM AQUABlack®
Meeker Equipment Corp. Inc. 1440 Industry Road Hatfield PA 19440	Meeker AquaFoam
Reliable Asphalt Products, Inc. 521 Old Seven Mile Pike Shelbyville KY 40065	Aqua Foam
Shell Oil Company 909 Fannin Street Houston TX 77010	WAM Foam
Stansteel 12711 Townepark Way Louisville KY 40243	Stansteel Accu-Shear™
	Stansteel Eco-Blend™
Terex Corporation 200 Nyala Farm Road	Terex® Warm Mix Asphalt System

Westport CT 06880	
Company	Additive
Akzo Nobel Surfactants 525 West Van Buren Street Chicago IL 60607	Rediset™
MeadWestvaco 501 South 5 th Street Richmond VA 23219	Evotherm™
PQ Corporation 300 Lindenwood Drive Malver PA 19355	Advera

PROVISIONAL TECHNOLOGY LIST FOR WMA TECHNOLOGIES

Company	Additive	Date Provisionally Accepted
Sasol Wax North America Corporation 21325B Cabot Boulevard Hayward CA 94545	Sasobit®	12/2011

Illinois Department of Transportation
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Approval Process for Technologies for Production of Warm Mix Asphalt

Effective: December 16, 2011

Revised: April 15, 2013

A. Scope

Warm Mix Asphalt (WMA) Technologies (additives, foaming technologies, and processes) will be evaluated by the Bureau of Materials and Physical Research (BMPR). Acceptable Warm Mix Asphalt Technologies will be placed on the APPROVED TECHNOLOGY LIST FOR WMA TECHNOLOGIES.

The WMA Technology approval process will be based on:

1. Initial screening by the Department.
2. Testing of mainline surface mixture produced at an approved asphalt plant on two field trial projects.
3. Or reciprocity with other states.

Once approved, the WMA Technology may be used in the production of WMA or Hot Mix Asphalt (HMA).

B. Initial Screening

The Department will review candidate WMA technologies for long term compatibility in initial use and reuse in future mixes. Technologies that could present potential recycling issues will not be approved or placed on the provisional list.

C. Field Trial Projects

Two successful trial projects that placed surface mix on mainline will be listed on the Department's APPROVED TECHNOLOGY LIST FOR WMA TECHNOLOGIES. A trial project is considered a success when it demonstrates that the WMA has been produced and placed in compliance with contract specifications and requirements specified herein.

1. Trial Project Requirements

Projects shall contain:

- o Minimum 2000 tons mainline WMA surface mix.
- o Minimum 2000 tons mainline HMA surface mix control section.

2. Sampling

Witnessed by the Engineer, the Contractor shall collect representative samples sufficient to produce the following for both HMA and WMA:

- Four (4) 63mm high gyratory specimens.
- Six (6) 95 mm high gyratory specimens.
- Additional 75 lbs of loose mix provided to the Engineer.

3. Hamburg Wheel Sample Preparation

a) Conditioning

- (1) WMA

- a. Hamburg Wheel Testing. The loose WMA mix shall be conditioned by short term aging in oven for not more than 2 hours at 270 ± 5 °F prior to gyratory compaction.
- b. Tensile Strength Testing. No short term aging is required.

b) Gyratory Compaction

- (1) Four (4) specimens each for HMA and WMA shall be gyratory compacted to $7.0 \pm 1.0\%$ voids and 62 ± 2 mm high.
- (2) Six (6) specimens each for HMA and WMA shall be gyratory compacted to $7.0 \pm 1.0\%$ voids and 95 ± 5 mm high.
- (3) Each specimen will be clearly marked for project ID and HMA or WMA.
- (4) Specimens will be allowed to cool then be packed for transport and provided to the Engineer.

4. Evaluation Procedure

Testing will be conducted by the BMPR on the samples received from the project as follows:

- a. Four (4) Gyratory specimens each for HMA and WMA will be evaluated using Hamburg Wheel Tracking Device according to IL Mod AASHTO T324.
- b. Six (6) Gyratory specimens each for HMA and WMA will be evaluated for tensile strength according to IL Mod AASHTO T283.
- c. Test results shall meet the criteria listed in the Warm Mix Asphalt BDE Special Provision (effective January, 2012).
- d. Additional loose mix may be used to determine compliance of specified volumetric criteria.

D. Reciprocity

1. WMA Technologies listed on approved lists of at least ten other states will be considered.
2. The WMA Technology must have been used in a climate similar to Illinois.
3. The WMA Technology does not modify the grade of PG asphalt specified on the plans.
4. The WMA Technology does not impact future recyclability of the pavement in either overlays or full-depth pavements.

E. Getting Started

1. A WMA Technology supplier seeking approval shall coordinate with a Contractor(s) to identify field trial projects meeting the criteria specified herein.
2. The Contractor shall submit a written request to the District Materials Engineer requesting to use the WMA Technology on a contract. The request should include the following:
 - a. Contract Number.
 - b. HMA mix design number (used for control section).
 - c. WMA Technology information with Material Safety Data Sheet and background information as appropriate.
 - d. Proposed paving plan with location of WMA and HMA sections.

3. Upon approval, the District Materials Engineer will forward the proposal to BMPR for final approval.
4. After successful completion of two field trial projects the WMA Technology will be listed on the APPROVED TECHNOLOGY LIST FOR WMA TECHNOLOGIES.

F. Removal

If the approved WMA technology is found to adversely affect performance of the asphalt pavement the WMA technology may be removed from the approved list.