

Survey on Warm-Mix Asphalt Usage in Canada

1. Do you specify the use of Warm Mix Asphalt (WMA) in your contracts?

Yes, routinely

Yes, rarely

No, never

No, have specified before but will not in the future. Please provide reasons below.

Other:

If Yes, when did you start specifying WMA technology?

If Yes, what is the approximate tonnage of WMA your organization has placed since starting to use this technology?

Less than 5,000 tons (one demonstration or small project)

5,000 to 50,000 tons (two to five projects)

50,000 to 250,000 tons (five to ten projects)

More than 250,000 tons (routine projects)

Other:

If Yes, how much WMA does your agency contract annually?

If Yes, which of the following options describe your use of WMA technology? Select all that apply.

Requirement

Allow as option

Allow as a separate bid item

If No, do you have plans to implement WMA within the next five years?

Yes

No (please provide reason(s)):

If No, what challenges do you anticipate in implementing WMA in your contracts?

2. What does your agency consider to be the primary benefit of WMA?

Provides a reduction in plant and workplace emissions

Acts as a compaction aid

Both

Other (please specify):

3. Which of the following does your agency accept as “warm mix” technology?

Supplier/refinery mixed WMA additive

WMA additives introduced “in-line” at the asphalt mixing plant

Both

Other (please specify):

If Yes, please specify typical dosage in each method of acceptance:

4. Are there any requirements for production or paving temperatures? Please specify.

5. Which of the following mixture types do you use WMA additives with?

Dense-graded

Open-graded

Gap-graded

None

Other:

6. What mixture design procedure do you use for WMA?

Superpave

Marshall

None

Other:

7. Is there any approval process for the WMA additive? If Yes, please specify.

Yes. Approval process:

No

8. Select the WMA additives you use most often. Select all that apply.

Accu-Shear™	Rediset® Shell	WAM Foam®
Cecabase® RT	Thiopave™	Aspha-Min®
Low Energy Asphalt (LEA)	Ultrafoam GX™	Evotherm® DAT
Sasobit®	Aquablack™	REVIK™
TLA-X Warm Mix Advera®	Evotherm® 3G	Terex®
WMA	Rediset™ WMX	Warm Grip N1
Double Barrel Green®	SonneWarmix™	Other (please specify):
Zyco Therm	CWM	

9. Does your agency require a specific mix design procedure to be followed when using WMA?

Yes

No

If Yes, are you willing to send us a copy of the most recent version of this procedure?

Yes

No

10. Does your agency require any performance testing to be completed as part of the mix design submission?

Yes

No

If yes, please specify the testing method with the ASTM or AASHTO method(s) if applicable:

11. Do you require any test(s) to evaluate the performance of moisture susceptibility of WMA technology? Select all that apply.

Yes, loose mixture testing:

Bitumen Bond Strength (BBS)
Boiling Water Test (ASTM D 3652)
Net Absorption Test (NAT)
Surface Free Energy (SFE)
Ultrasonic Accelerated Moisture Conditioning (UAMC)

No requirement

Other. Please specify with ASTM or AASHTO designation(s):

Yes, compacted mixture testing:

Asphalt Pavement Analyzer (APA - AASHTO TP 063)
Dynamic Mechanical Analyzer (DMA)
Dynamic Modulus (AASHTO TP 62)
Energy Ratio (ER)
Hamburg Wheel Tracking Test (AASHTO T 324)
Immersion-Compression Test (AASHTO T 165)
Modified Lottman Test (AASHTO T 283)
Moisture Induced Stress Tester (MIST)
Resilient Modulus (ASTM D 4123)

If Yes, please briefly list your testing criteria (i.e. TSR of more than 80% for AASHTO T 283):

12. In the last five years, which of the following premature failures or distresses have you observed in WMA projects or trials? Select all that apply.

Early coarse aggregate loss or raveling

Rutting or permanent deformation

Moisture damage

Thermal cracking

None

Other:

13. Do you have any useful information, reports, or success stories related to your WMA trials and projects that you would like to share with us?

Yes

No

Contact Information

Full Name:

Organization:

Address (City, Province, Postal):

Phone:

Email:

Please add any additional comments, experiences, or challenges you wish to share with us in regards to the implementation of WMA technology (or about this survey):