

Frequently Asked Questions about Warm Mix Asphalt(WMA)

Warm Mix Asphalt (WMA) is a relatively new technology in the United States, and in Minnesota in particular. The list below is not an exhaustive list of questions about warm mix, but it does try to answer some of the most common questions about this technology.

What is Warm Mix Asphalt?

Warm Mix Asphalt (WMA) is the generic term for any technology (additive or water foaming technique) added to an asphalt mixture that allows the mixing and compaction temperature to be reduced by 20 to 100°F. It allows the mix to remain workable at lower temperatures, and has potential environmental, operational, and performance benefits over traditional hot mix asphalt (HMA).

The contractor has approached us (local agencies) about substituting WMA for HMA. Should we use WMA on our project?

Mn/DOT supports the use of WMA as an alternate to HMA on most projects.

Should we pay an additional cost for warm mix?

The use of WMA may add between \$0.60 to \$2.00 per ton of mix, although as WMA becomes more commonly used that price differential should be reduced. However, agencies should not pay the additional costs if WMA is proposed after the project has already been let.

Are there any pavement performance issues with WMA?

The oldest WMA projects in the US are only 6 years old, so no long term performance data is available. Early rutting and moisture damage are potentially of concern, although no known

Where can I get more information on WMA?

Visit the websites www.warmmixasphalt.com or www.fhwa.dot.gov/pavement/asphalt/wma.cfm. Alternatively, call John Garrity, Mn/DOT Bituminous Engineer, at 651-366-5577 or Tim Clyne, MnROAD Operations Engineer, at 651-366-5473.

WMA projects have shown these distresses to date.

With the increased use of RAP and/or shingles, are we getting complete blending between the recycled and virgin binders?

A recently completed national study showed through laboratory testing that WMA including 25% RAP did achieve adequate blending. However, at high percentages of RAP or RAS and at low production temperatures blending is still a concern.

Are there any different procedures required for QC/QA testing?

Aside from using lower lab compaction temperatures (recommended by the Contractor or WMA supplier), there should be no differences in laboratory test procedures between WMA and HMA.

How do I perform a WMA mix design?

For mixtures with binder absorption less than 1%, WMA technology may simply be “dropped in” to an approved HMA mix design.

Can modified binders be used with WMA?

WMA has been used with modified binders (polymers, PPA, etc.) with success.

What traffic levels can WMA be used on?

Until questions about early rutting are answered, WMA should be limited to Traffic Level 4 and lower.

