



# CHANGING FOR THE BETTER

WE'VE MADE THE  
SWITCH TO WARM  
MIX ASPHALT.

A MEMBER OF  
 **HOLCIM**

  
**AGGREGATE**  
INDUSTRIES



# WHAT IS WARM MIX ASPHALT?

Warm mix asphalt (WMA) is a general term for technologies that increase the workability and compactability of asphalt materials at lower mix temperatures.



## WHAT TEMPERATURE IS WMA MANUFACTURED AT?

Produced at temperatures of **up to 40°C lower** than traditional hot mix asphalt. Manufacturing temperature depends on the type of binder used in the mix. WMA is mixed at a maximum of 150°C for penetration grade mixes, and maximum 175°C for PMB mixes.

Warm mix is our new sustainable standard asphalt.

## DOES WMA COMPLY WITH NATIONAL SPECIFICATIONS?

**Yes.** WMA has been introduced into National Highway standards (SHW Clause 908). This specification permits the use of warm mix technologies with the vast majority of asphalt products. For more information, check with your local Technical Manager.





Infrared image of warm mix asphalt being laid.

## WHAT IS THE IMPACT ON THE EMBODIED CARBON OF WMA?

Because plant mixing temperatures are lower, less fuel is needed to dry and heat the aggregate and therefore **WMA has a lower embodied carbon footprint compared to hot mix asphalt.**

There are a number of dependent variables that will impact on the embodied CO<sub>2</sub>e in the mix; including (RA) content, plant fuel type, and binder content.

However there is typically an **8-10% carbon reduction** compared to an equivalent hot mix; **this equates to an average saving of 6kg CO<sub>2</sub>e/T - which is over 26,000 miles of car travel.**

## IS WMA AS DURABLE AS HOT MIX ASPHALT?

**Yes.** Lower asphalt temperatures during production reduces binder ageing (oxidation and hardening) which is a major cause of asphalt pavement failure and therefore could extend the expected in-service life.



**NO SPECIAL EQUIPMENT IS REQUIRED TO PLACE AND COMPACT WMA. IT IS INSTALLED IN THE SAME WAY AS HOT MIX ASPHALT.**

## CAN WMA BE LAID IN COLD TEMPERATURES?

**Yes.** Some minor seasonal adjustments to laying practices will be required in winter months to ensure enough heat is retained in the material to permit full compaction, which is no different to hot mix alternatives.

## WHAT IMPACT DOES WMA HAVE ON MATERIAL COOLING TIME?

Warm mix technology can **reduce cooling time by over 50%** improving site installation productivity, reducing contract times, and reducing costs; allowing earlier reopening of carriageways and less disruption to the traveling public.



## DOES WMA HAVE ANY NEGATIVE HEALTH & SAFETY IMPACT ON WORKERS AT THE PAVING SITE?

**No.** Visible fume emissions and odours are reduced both at the plant and the paving site. Less emissions and odours are released at lower production temperatures. This creates a worksite that is cooler and more pleasant for workers during placement and compaction.

## CAN WE SUPPLY OUR 942 THIN SURFACE COURSE SYSTEMS IN WARM MIX?

**Yes.** Aggregate Industries has attained BBA certification for SHW Clause 942 materials as a warm mix. Because our 942 materials are PMB modified, the production temperature range for these as warm mix products is 155-175°C.







# MAKE A CHANGE FOR THE BETTER

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ALTERNATIVELY, SPEAK TO  
YOUR SALES OR TECHNICAL  
REPRESENTATIVE ABOUT  
WARM MIX ASPHALT TODAY.