Warm Mix Asphalt with aspha-min®
Abstract

• Warm Mix Asphalt (short „WMA“)
• Reasons for WMA
• Ways to WMA in Germany
• Zeolite
• Low Viscous Asphalt (zeolite in HMA)
• Conclusion: Savings?
Warm Mix Asphalt (short „WMA“)

• Construction method, aiming at a clear reduction of mixing and laying temperatures of rolled and mastic asphalt

• After decreasing temperatures by up to 30 °C, quality, workability and durability of the mix shall remain unchanged
Reasons for WMA

• Environmental care (reduction of CO$_2$, NO$_x$, VOC)
• Work safety (reduction of odour, vapour and aerosols)
• Energy savings
• More rapid availability for traffic
• Less ageing (oxidation) of the binder for longer durability of road surfaces
• Less wear and tear to mixing plant and paver

www.irf2010.com
Ways to WMA in Germany

Based on long-term study*:

- Waxes
- Zeolite

* www.bast.de: German Federal Highway Research Institute
Zeolite

- Contains rd. 20% water of crystallisation
- When introduced before the binder at 0.3%, water will be released gradually, creating water vapour
- Controlled micro-foaming effect leads to a slight increase of the binder volume
- Effect lasts until cooling down at below 100 °C, thus ensuring comfortable workability of the mix
- No changes to binder grade or performance of resulting asphalt layers
Low Viscous Asphalt (zeolite in HMA)

- Extended hauling distance
- Cold weather paving
- Ease and prolongation of compaction with manual application
- Ease of compaction with stiff binders and mixes
- Ease of compaction with higher portions of reclaimed asphalt
- Ease of compaction with thin layers
Conclusion: Savings?

• **Energy**: for lower mixing temperatures (WMA)
• **Time**: for shorter construction periods (WMA)
• **Raw materials**: better compaction (HMA) and less ageing (WMA) lead to extended useful life

= Sustainability in road construction
Thank you very much for your attention.