

# LISBOA 2010 16th World Meeting

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Sharing the road  
16th  
World Meeting  
International Road Federation

# Warm Mix Asphalt with aspha-min<sup>®</sup>



## 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<sub>2</sub>, NO<sub>x</sub>, 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



## Ways to WMA in Germany

Based on long-term study\*:

- Waxes
- Zeolite

\* [www.bast.de](http://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**



Warm Mix Asphalt with **aspha-min**<sup>®</sup>

**Thank you very much  
for your attention.**