SMA Application
Stone Mastic Asphalt
Overview
SMA Paving

- Paving
  - SMA Paving Practices in Europe

- Compaction Technology
  - Solutions for Achieving Density with SMA

- Chip Spreading
  - Local Successes & Challenges
SMA Job Details from Europe - Reconstruction of Buchel Air Base runway, Germany

• Job Site Details
  Total Area: 103,000m², 2,250mm in length
  Surface Course: SMA 0/11 with 25/55 (Polymer-Modified Bitumen)
  4kg of cellulose fiber per tonne
  Paved material quantity - 10,000 tons of SMA in four days

Use of Tamper Bar and Vibration Screeds

The tamper bar provides good pre-compaction of SMA mix 83%. Driven by eccentric shaft, the tamper bar packs mix under the screed. Compaction by the tamper bar is followed by vibrating screed plates providing optimum gran size distribution.
Use of wide paving and elimination of joints
Vogele Super 2100-2 with SB250Tamper Vibe Screed, 83% Compaction
SMA 23M Hot to Hot
Oscillation Technology

Hamm- “Rollers with oscillation technology achieve excellent compaction even of difficult to compact construction materials such as stone mastic asphalt or polymer-modified mixes.”

“ This is because, in contrast to vibration compaction, the effective direction of vibrations during oscillation promotes the desired redistribution of the long-chain binding agents”

- Rapid Increase in compaction, with fewer passes
- Self Regulating system- always appropriate amplitude
- Aggregate particles are redistributed non-destructively
- Larger time window, More time for asphalt compaction
Oscillation produces both forward and backwards movements, In doing so never lifts off the ground. Instead the ground is compacted dynamically without interruption.
“Efficient compaction even at low asphalt temperatures, with fast-cooling thin layers and in adverse weather conditions”
Hamm HD+90 VO – Vibration Front/ Oscillation Rear
2/5 High Grade Chipping (Granite or Diorite) not sealed
Chip Spreading

Local Successes & Challenges

• Technology (Hamm Precision Chip Spreader)
  - Application of applying chip to asphalt at a precise rate

• Delivery Rate
  - Hydrostatic distributing cylinder with infinitely variable speed adjustment
  - 66” Width, 800 liters capacity in hopper, quick to fill
  - Variable spreading width by means of slide valve selection

• Ease of operation
  - Once calibrated will deliver .75kg per sq. meter at push of a button
  - Installation & Removal of spreader via quick dis-connect system
Highway 400 Northbound Express, Hamm HD130VO & HD+90VV with Chip Spreader
Highway 400 Northbound Express, Hamm HD130VO & HD+90VV with Chip Spreader
Loading the Hopper  VS.  Too much AC content
VS.

Too much AC content
“Lazer Beams!”

Thank You