Global emulsions markets
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Etienne le Bouteiller
Introduction

The markets today

Driving factors

Answers from the industry

Conclusion
Introduction

- International Bitumen Emulsion Federation
- An association formed in 1996
- Members from 19 countries
- 75% of the volumes worldwide
The IBEF around the World

Political Map of the World, September 2008

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The markets today

- A delivery mechanism
- A long story that dates back from the 20’s
- A joint work with the oil and the chemical industry
The markets today

- 8 million MT / year
- i.e. 9% of the road bitumen volumes
The markets today

- The main players
Driving factors

- The need for pavement preservation
- Increasing maintenance needs
- An adverse economical context
- Health requirements and safety issues
- Environmental context
Driving factors

The need for pavement preservation
- Most of the inland transportation is made by roads 85.3% of passengers 73.8% of goods (Europe)
- Pavements need to be maintained in due time
Driving factors

- The need for pavement preservation
- Increasing maintenance needs
  - Along with the growth of the economy
  - Along with the growth of the road networks
    - By 2050, China's road network will cover over four million kilometres, compared to the current 1.7 million kilometres, and the quality of road transportation will be on a par with that of developed countries, Vice Minister of Communications Hu Xijie said on Monday.
    - Hu was outlining the development of China's road transportation network in the first half of the 21st century in his address to the 2002 China Road Transportation Development Forum (CRTDF).
Driving factors

- The need for pavement preservation
- Increasing maintenance needs
- An adverse economical context
  - Economical crisis, debt challenge in Western countries, low public budgets
  - Increasing costs
Driving factors

- The need for pavement preservation
- Increasing maintenance needs
- An adverse economical context
  - Economical crisis, debt challenge in Western countries, low public budgets
Driving factors

• The need for pavement preservation
• Increasing maintenance needs
• An adverse economical context
• Health requirements and safety issues

International Agency for Research on Cancer

Occupational exposures to bitumens and their emissions

“ [...] This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as “possibly carcinogenic to humans” (Group 2B).”

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Driving factors

- The need for pavement preservation
- Increasing maintenance needs
- An adverse economical context
- Health requirements and safety issues
- Environmental context
  - Reducing carbon dioxide emissions
    - Kyoto protocol: -8% in 2012 v/s 1990
    - Achievement: -6.2% in 2008 (EU15), -14% in 2009 (EU27)
    - Aims for the future: -20% in 2020 (EU27) or more (-30%)
Answers from the industry

- The need for pavement preservation
- Increasing pavement maintenance needs
  - Bitumen emulsion techniques are ideally suited for pavement maintenance
  - Micro surfacing, surface dressing, cold in place recycling
## Answers from the industry

- **An adverse economical context**
  - Emulsion techniques are affordable

<table>
<thead>
<tr>
<th>technique</th>
<th>micro surfacing</th>
<th>micro surfacing 2 layers</th>
<th>chip seal</th>
<th>very thin asphalt concrete</th>
<th>HMA</th>
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<tbody>
<tr>
<td>cost / m² €</td>
<td>2,04</td>
<td>3,04</td>
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</table>

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<td>cost / m² €</td>
<td>2,45</td>
<td>2,30</td>
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<th>chip seal</th>
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<tr>
<td>cost / y² $</td>
<td>1,50 - 3,00</td>
<td>1,50 - 2,00</td>
<td>4,00 - 6,00</td>
<td>3,00 - 6,00</td>
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</table>
Answers from the industry

- Health requirements and safety issues
  - Low temperature provides with low emissions
Answers from the industry

- Health requirements and safety issues
  - Low temperature provide with low emissions

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Surface dressing in the United Kingdom

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<tr>
<th></th>
<th>2001</th>
<th>2010</th>
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<tr>
<td>non modified emulsions</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>modified emulsions</td>
<td>67%</td>
<td>80%</td>
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<tr>
<td>non modified cut backs</td>
<td>6%</td>
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</tr>
<tr>
<td>modified cut backs</td>
<td>5%</td>
<td>0%</td>
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</table>
Answers from the industry

- Environmental context
  - Reducing carbon dioxide emissions

- Road base asphalt
- Gravel emulsion
- Cold in place recycling
- Materials
- Upstream transport
- Manufacturing
- Transport to the site
- Placing
Conclusions

- The bitumen emulsion techniques have their role to play within a difficult financial context.
Conclusions

- The bitumen emulsion techniques have their role to play within a difficult financial context
- Wide room for increase
Conclusions

- The bitumen emulsion techniques meet HSE challenges
- The bitumen emulsion techniques need to meet new challenges
  - High traffic roads
  - Quality of the bitumen
Thank you