Lower Temperature – The Best for Asphalt, Bitumen, Environment and Health & Safety

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The production and laying temperature of asphalt can be reduced by adding zeolites (to rolled asphalt) or waxy additives, such as Fischer-Tropsch-Paraffin, montan wax or amide wax (to both rolled asphalt and Gussasphalt (mastic asphalt)), resulting in a significant reduction of the exposure to vapours and aerosols from bitumen at the workplace.

DESTINATION COPENHAGEN Asphalt – Roads for Life

Both BITUMEN Forum and asphalt industry expect the use of warm mixed asphalt to result in:

- reduced emissions of vapours and aerosols
- reduced emissions of carbon dioxide
- less odour
- energy savings
- reduced wear and tear to plant and paver
- reduced oxidation and aging of the binder
- improved usage properties of the surface
- earlier open to traffic

Thus, temperature reduction is not only the silver bullet for work safety in construction but an innovative and effective way to use asphalt.

The additives used are Fischer-Tropsch-Paraffin, montan wax, amide wax and zeolite

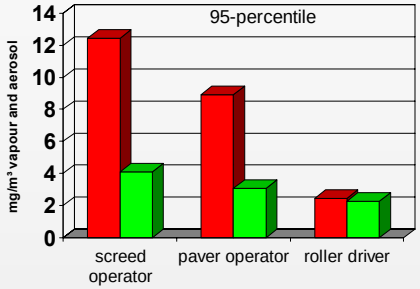
Product	Chemistry	Website
Sasobit	Fischer-Tropsch-Paraffin	www.sasobit.de
Asphaltan A or B	Montan wax	www.romonta.de
SüBit VR 35 or 45	Amide wax	www.gkg-oel.de
Licomont BS 100	Amide wax	www.exolit.com
aspha-min	Zeolite	www.aspha-min.com

Early examinations of toxicological properties showed no evidence of health problems caused by any of the above substances. In fact, there are virtually no more emissions from these substances after manufacture of the mix.

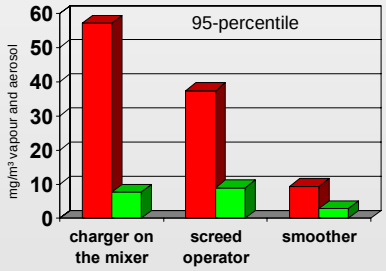
Results of personal air sampling for hot & warm mix asphalt with additives

(95-percentile values of the data collectives for the sum of vapours and aerosols of bitumen)

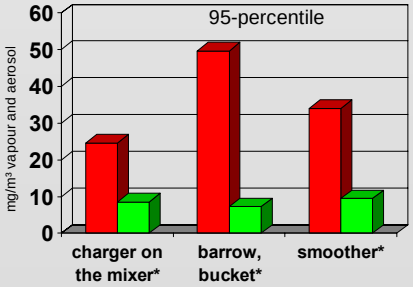
Rolled Asphalt — hot mix 160 ± 20°C → 120 – 160°C warm mix



Gussasphalt, paving — 220 - 260°C → ≤ 230°C temp. reduced

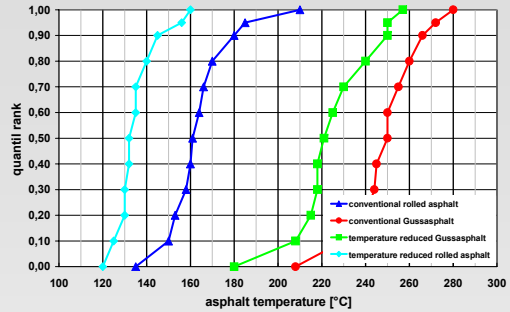


Gussasphalt, flooring — 210 - 280°C → ≤ 230°C temp. reduced

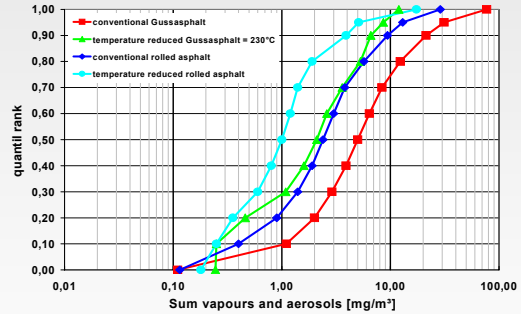


*only a limited number of measurements ≤ 230°C are available

Comparison of rolled asphalt and Gussasphalt with or without additives for temperature reduction



Temperature distribution for asphalt with or without temperature reduction



Exposure during application of rolled asphalt and Gussasphalt

More Information
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www.gisbau.de/bitumen.html

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