**Benninghoven | Reducing the CO2 footprint in asphalt production**

**New burner generation MULTI JET** **at bauma 2025**

**Pioneering technologies for increasing efficiency are a focal point of Benninghoven at bauma 2025. To increase the sustainability in asphalt production, the specialist for asphalt mixing plant offers a number of innovative solutions, including for reusing asphalt and temperature-reduced asphalt, for dust collection and for the use of hydrogen as a fuel of the future.**

**CO2-free asphalt production with 100** **% green hydrogen**   
Benninghoven presents the MULTI JET burner generation and MULTI JET Control burner control in Munich. This burner generation can use four different fuels at the same time, regardless of their physical state – whether solid, liquid or gaseous. In addition to new plants, the burners can also be used as part of a retrofit, regardless of the manufacturer of the existing plant.

A special feature of the MULTI JET burners is the use of mixed fuels, allowing for example the simultaneous use of hydrogen, LPG, HVO, biogas and natural gas through separate nozzles. Fuels can be switched on the fly, without shutdown or downtime. This means that the system ensures a reliable supply with different fuels, offering owners a high level of flexibility when selecting the most cost-effective and most readily available energy source. This significantly contributes to lowering operating costs, also with respect to future CO2 prices.

In addition to this, the noise emissions of the new burner generation were reduced by   
5 dB(A), which corresponds to cutting the perceived noise level in half. The electrical power consumption was also reduced by 20 % while maintaining the same feed capacity.

**Dust collection solution from Benninghoven optimises asphalt production**   
With the newly developed dust collection system, the specialist for asphalt mixing plants offers another solution that actively contributes to sustainability and process quality in asphalt production. Dust collection systems optimise the smooth operation of asphalt mixing plants. The dust generated during the mixing process, especially stone particles and bitumen vapours, has to be extracted and filtered efficiently. This is not only relevant to the process, but also subject to strict official emissions requirements. As these regulations are being tightened up increasingly in many countries and regions, effective dust collection solutions are becoming more sought after.

The key features of the new dust collection system are the flow-optimised design, a good overall energy balance, low residual dust values, a high level of process reliability, a large filter surface and easy access for service.

**Maximum recycling: more profit with the recipe generator**

The aim of maximum recycling is to enable reuse of high-quality materials in order to maintain or even improve the original material quality. Another advantage of maximum recycling is a significant reduction of the CO2 emissions. Studies have shown that up to 20 % CO2 can be saved with a recycled materials content of up to 60 %.

The recipe generator plays a crucial role here, together with the technologies and Retrofit solutions for the hot gas generator, the REVOC system and the cold feed systems. As a supplementary software option for the BenninghovenBLS 4 plant control system, the recipe generator makes a significant contribution to optimum recycling management in the asphalt mixing plant while enabling maximum recycling content per ton of finished asphalt. It offers the option of blending several RAP types (asphalt granulate) in order to get as close as possible to the grading curve of the asphalt type to be produced. The maximum recycling content is calculated in compliance with the target product, the external parameters and the plant configuration.

This is accompanied by the automatic changing or blending of the bitumen type from a hard binding agent to the next softer binding agent with increasing RAP content, in order to remain within the limits of the specified softening point.

The recipe generator consequently enables a dynamic adaptation of the RAP content in 1-% steps. All required components are automatically adjusted in accordance with the current RAP content. There is no need to interrupt ongoing production or to change the recipe (1 recipe for 1 asphalt type).

**Reduced-temperature asphalt significantly reduces emissions**

The drying and heating processes for virgin mineral and recycling materials are an energy-intensive part of asphalt production.Savings in fuel and emissions can be achieved if authorities and plant operators opt for reduced-temperature asphalt. This is the term used to describe asphalt mixtures with a final temperature of around 120 °C. Compared with conventional mixtures, which usually need to be around 160 °C, the reduction is around 30 %. The potential savings in terms of energy and CO₂ are substantial: 18,000 kWh and 6,000 kg of CO₂ are saved in the daily production of 2,000 t of asphalt.

Benninghoven asphalt mixing plants offer three innovative approaches for producing reduced-temperature asphalt: the use of solid or liquid additives and the use of water as an aid.

With the Plug & Work system, the components can be efficiently integrated in existing mixing plants or retrofitted in order to enable flexible, resource-saving production. Foam bitumen is interesting as a binder for producing reduced-temperature asphalt as it only needs water as an aid – which is already available at any asphalt mixing plant anyway. The released surface energy ensures that the binder moistens the mineral very well during the mixing process even at low temperatures, temporarily generating installation properties that are comparable to those of hot asphalt. This means that reduced-temperature asphalts make a crucial contribution to reducing PAH (polycyclic aromatic hydrocarbon) emissions during asphalt installation.

**Ciber technologies for continuous asphalt production and mobility**

On the Benninghoven exhibition area, trade visitors can also learn about the technologies from Ciber. In Munich, the specialist for continuous asphalt production shows solutions with which users can also implement an efficient and mobile continuous mixing process. This means that Wirtgen Group covers the entire spectrum of sustainable and economical solutions in asphalt production.

**Photos:**

  
**Benninghoven\_New MULTI JET burner generation with MULTI JET Control\_01**

The innovative burner generation from Benninghoven can use four different fuels at the same time, regardless of their physical state – whether solid, liquid or gaseous.



**Benninghoven\_New dust collection system\_02**  
At bauma 2025, Benninghoven once again presents a dust collection solution from in-house production.

  
**Benninghoven\_recipe generator\_03**  
As a supplementary software option for the BLS 4 plant control system, the recipe generator from Benninghoven makes a significant contribution to optimum recycling management in the asphalt mixing plant.

  
**Benninghoven\_production of reduced-temperature asphalt\_04**  
Benninghoven Asphalt mixing plants offer three innovative approaches for producing reduced-temperature asphalt: the use of solid or liquid additives and the use of water as an aid (foam bitumen).

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