



SMART. THE FUTURE IN ROADBUILDING
SAFE.
SUSTAINABLE.



BENNINGHOVEN SUSTAINABILITY

# BENNINGHOVEN BLS 4 CONTROL SYSTEM

**SMART.SAFE.SUSTAINABLE** 

- > Optimised control solution | Lifecycle Smart
- > IT security Safe
- > Recipe generator Sustainable

#### **BLS 4 CONTROL SYSTEM**

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#### 1 At a glance

- > Latest hardware
- > Latest software
- > More powerful system
- > Curved monitor two monitors merged on one screen, (ergonomic workstation, wide-screen monitors in 4K)
- > Experience-based values from operators were actively implemented
- > Intuitive operation
- > Main screen always in the background
- Sub face plates with detail images of plant parts can be shown/hidden
- Free positioning of detail images
- > User-friendly operation fewer clicks
- > Software and hardware are subject to life cycle management for the first time
- > Adapted to the product life cycle of the software the system is always up to date
- > Pre-configured trends for analysis and optimisation of processes
- > IT security
- > Ready for "big data"
- > Recipe generator 2.0 proven system, with user-friendly operation and new features
- > The new software focuses on a stable, powerful and

### 02 Lifecycle

**SMART** 

The asphalt mixing plant has a life cycle of 20 - 30 years, while the electronic components have a life cycle of approx. 4 - 8 years - the BENNINGHOVEN life cycle management closes this gap.

- > Software and hardware are successively kept updated.
- Updates, hardware adaptations are conducted in regular short cycles.
- The older the control system / components, the greater the risk of failures or incompatibilities of components that cannot be replaced directly.
- Typically replaced components hard drives, printers, batteries, monitors



# Optimised control solution - focused on functionality

- > New monitor instead of 2 monitors, only one curved monitor
- > Easier control operations
- > Tablet control e.g.: Wheel loader tool cold feed unit
- > Pre-made trend configuration
- Process support/plant optimisation
- Plain text display
- Example: trend package "recycling"
- Example: trend package for drying virgin mineral
- Value 1 total output of cold feed unit in t/h
- Value 2 burner output level in % (control range)
- Value 3 drum discharge temperature in °C
- Value 4 filter input temperature in °C
- Value 5 drum frequency in Hz
- > Smart Weighing System smart, time-optimised dosing system for batch-by-batch weighing of the virgin mineral
- > New recipe generator

#### **1** IT security

**SAFE** 

- > Improved IT security, state of the art
- > Complies with the current legal requirements
- > Future-proof life cycle
- > Monitoring of the system status
- > Increased security with auxiliary modules
- > Protection against cyber attacks no unauthorised access to the plant control system possible
- > Increased password security
- > Data exchange between sender and recipient
- > Reliable updates
- Download of security updates
- Functional updates
- Updates for the operating system



**BENNINGHOVEN CONTROL SYSTEM** 







#### **SUSTAINABLE**

#### The BENNINGHOVEN recipe generator

## **05** What is the recipe generator?

- > Software option
- > Dynamic generation of recipes with variable recycling

# **06** Easy handling

- > The RAP addition rate is adjusted with a slider, the remaining recipe ingredients are adapted automatically, taking into account the following aspects:
- Screen curve, binding agent content and hardness of final asphalt (base recipe)
- RAP analysis
- Hardness of the fresh bitumen
- Permissible RAP addition rate

## Numerous advantages

- > Production does not have to be interrupted for changing the RAP addition rate
- > No recipe change necessary
- > Reduced recipe variety for each asphalt type and its ongoing administration
- > Option of high recycling addition rates strong economical aspect
- > Optimum, constant quality (temperature) of the asphalt (fine adjustment in 1-% steps)
- > Balance overview of a job, not partial jobs due to different recipes

#### Recipe generator update - what is new?

- > Easier and more clearly structured operation
- > Use of the recipe generator regardless of whether the virgin mineral is run through the screen or (NEW) with bypass - recipes are always accurate
- > Automatic mixing of different recycling types possible generation of the resulting recycling analysis continuously from different recycling types
- > Minimising of the manual analysis preparation
- > The RAP analysis (screen curve analysis) only has to be entered in the system directly and the recipe generator automatically executes all other steps.
- > Automatic change of the bitumen type, including tank selection, resulting from the base recipe
- > Users can define exceptions additives that must not be adapted dynamically - freely selectable by the user



