TRANSPORTABLE ASPHALT MIXING PLANTS
WITH TRANSPORT-OPTIMISED CONTAINER DIMENSIONS

TYPE ECO
Trendsetter for the highest demands.

State of the art! This is an approach that BENNINGHOVEN has followed for over a century. Through consistent further development, growing from a trade workshop to a globally active company, BENNINGHOVEN is a trendsetter in the field of asphalt mixing plants today. The opening of the world’s most modern factory for asphalt mixing plants in summer 2018 was another milestone in our successful history. This allows us to offer our customers the best possible solutions when it comes to producing the highest quality asphalt in an economical process.

BENNINGHOVEN GmbH & Co. KG is a member of the expanding, worldwide active WIRTGEN GROUP which has been part of John Deere since late 2017.
The ECO plant type offers an impressive demonstration of the new BENNINGHOVEN product philosophy.

It’s all in the mix

Asphalt mixing plants must be designed to provide all compounds in the right quantities and with the correct temperature, at the right time and in the right place. In addition to this, the processes must be safe, economical and environmentally friendly.

With our wide range of products and the large variety of options, any customer can find the right plant for their site, to meet all requirements and conditions.

Perfectly positioned at all times.

The powerful ECO plants guarantee optimum quality of the mixed materials and can be operated as stationary systems, but can also handle rapid location changes without problems.

- Main components in transport-optimized container dimensions
- Simplified, cost-efficient transport worldwide
- Fast assembly (installation and dismantling)
- Modular expansion possible
- Transportable or stationary foundations – rapid implementation
- Pre-configured interfaces
- Cold recycling up to 30 %
- Middle ring dosing system 25 %
- Dosing system into the mixer 30 %
- Retrofitting possible at any time
- Ergonomics concept
- Health and safety
- Maintenance concept
Saves time and money.

MAXIMUM MOBILITY AND FLEXIBILITY

The key advantage of the ECO plants is the design of the main components in transport-optimised container dimensions allowing easy transport by road, sea or rail.

YOUR BENEFITS:

- Easy and cost-optimised transport worldwide
- Uncomplicated loading
- Substantial time savings

Easy transport worldwide

The transport-optimised container system allows easy and fast loading, transport, storage and unloading of goods. The transport-optimised shape and size allows transporting of goods using worldwide standardised and readily available transport means and therefore fast turnaround times.

COMPETITIVE ADVANTAGE
THANKS TO CLEVER LOGISTICS

- Locations with an ECO plant
- Locations with up to 10 ECO plants
- Locations with more than 10 ECO plants
Thanks to the intelligent modular system, the ECO asphalt mixing plant features easy assembly and fast readiness for operation.

All sections of this compact plant are already pre-wired and equipped with pipes at the factory, greatly facilitating handling on site. This allows fast and effective installation. The connections can also be dismantled within a short period of time, transported and reassembled at a new location. This added value becomes particularly evident at mobile construction sites and large temporary construction sites.

The plant can be installed either on mobile steel foundations or permanent concrete foundations.

YOUR BENEFITS:
+ Fast assembly (installation and dismantling) and relocation
+ Modular expansion possible
+ Pre-configured interfaces
+ Installation possible without concrete foundations
Just carry on.

OPTIMUM RELOCATIONS

The ECO plants master fast relocations without quality loss, providing a crucial advantage for large temporary construction sites.

Guaranteed reliability

Due to the high quality of the components, the plants can be assembled and dismantled as often as required without restrictions.

Despite frequent component movements, this does not cause any warping of the steel supports. This is achieved with a high-quality powder coating and clever designs based on the load classes (earthquake, wind loads, snow loads).

The ECO plants also stand for a high level of reliability and a strong performance without downtimes, which is especially important for prestige projects and large construction sites with very tight schedules.

YOUR BENEFITS:

- Reliable performance
- No downtimes
- Reliable planning and fast handling

The optimum relocation process saves time and money.
The compact ECO plants feature strong and reliable plant performance during operation. Optimum quality of the asphaltic mixture is always guaranteed with a mixing capacity of up to 320 t/h.
Perfectly positioned.

THE ECO PLANT AT A GLANCE

Bitumen system
- Optimum stocking
- Efficient heat insulation concept
- Expanded options with intelligent BENNINGHOVEN technologies

Cold feed unit
- 3/4/5/6-fold cold feed units with 12 m³ each
- Precise pre-classification
- Flexible installation

Dust collection system
- Efficient filter function/dust collection
- Maximum use of space

Filler silo
- Storage of reclaimed filler
- Optional reclaimed filler loading (loading hose, loading fittings, filler water mixer)
- Optional storage of imported filler

Hot bin section
- 17 t
- 55 t
- in 4, 5 or 6 bins
- Stocking of the prepared mineral according to size
- Sand/bypass separate or combined
- Oversize aggregate discharged to outside or into the last bin

Asphalt transfer
- Direct transfer (10 - 53 t mixed material loading silo)
- Skip track (60 - 325 t mixed material loading silo)
- Mixed material diverter chute (60 - 109 t mixed material loading silo)

Mixed material loading silo
- Direct loading or storage
- Various expansions
- Flexible positioning
- No mixed material loading silo
- 53 t (1 chamber) to 325 t (7 chambers)

Foundations
- Stationary concrete foundations
- Mobile steel foundations

Dryer drum with burner
- Optimum drying and heating of the virgin mineral
- Different versions of the drum depending on requirements

Screen unit
- 4-fold or 5-fold screening

Slewing crane
- 180°
- Lifting capacity 500 kg

Mixing tower
- Optimum wear protection
- Trouble-free process

Weighing and mixing section
- Fast and precise weighing and feeding
- Good accessibility
- 1.25 t mixer = 100 t/h
- 2 t mixer = 160 t/h
- 3 t mixer = 240 t/h
- 4 t mixer = 320 t/h
- + Granulate dosing system
- + Powder / granulate dosing system
- + Manual bag dosing system
- + Liquid additive system
- + Foam bitumen system
- + RAP system

ADDITION OPTIONS:
- ECO 1250/2000/3000/4000
- Highest manufacturing standards
- Innovative technologies
- Comprehensive customer support
- User-friendly, contemporary user interface
- Fast training, flexible personnel management
- Control and monitoring of the complete plant and mixing process
- Realistic visualisation in real time
- Energy monitoring, backup system for high operational reliability

YOUR BENEFITS:
- Innovative technology for asphalt transfer within the plant
- New, more cost-efficient alternative to the skip track
- Purely mechanical structure, particularly resistant to malfunctions
- Worldwide functional reliability
- Quick, strain-free positioning for silo selection
- Active cross-mixing during material transfer minimises separation effects in the end product

Additional information:
- Control systems brochure
- Retrofit brochure

BENNINGHOVEN is world market leader for burners and the only manufacturer of 4-fuel burners.

Additional information:
- Highlights flyer mixed material diverter chute
- Highlights flyer weighing and mixing section
Thought further.

THE ECO VARIETY OF OPTIONS

55 t
Expanded hot bin section

325 t
Maximum expanded loading silos

The well thought-out modular system allows expansions with additional components at any time.

- High level of flexibility and individual customisation
  - One great advantage of the ECO plants is the flexible expansion of the capacities of the loading silos and hot bin section. BENNINGHOVEN offers the right plant solution for any requirements profile.

YOUR BENEFITS:

- Low investment costs
- Direct loading
- Market-focused recipe selection
- Optional adjacent loading silo
- High storage capacity and flexibility
- Flexible expansion of the loading silo capacities
- Flexible expansion of the hot bin section capacities
- Time-optimised loading of different recipes
- Small batches with direct loading

Asphalt optimization with feed systems

Additives can be introduced into the mixture to optimise the properties of the asphalt. BENNINGHOVEN offers the option of a single or double feed system.

Granulate dosing system
Powder/Granulate doing system
Manual bag dosing system
Liquide additive system
Foam bitumen system
Additional customer requests
**A question of type.**

**ECO - TECHNICAL DATA**

<table>
<thead>
<tr>
<th>ECO 1250</th>
<th>ECO 2000</th>
<th>ECO 3000</th>
<th>ECO 4000</th>
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<tbody>
<tr>
<td>Nominal mixing capacity (t/h)</td>
<td>100</td>
<td>160</td>
<td>240</td>
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<tr>
<td>Drying capacity (t/h)</td>
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<td>145</td>
<td>220</td>
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<tr>
<td>General information</td>
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</tr>
<tr>
<td>Foundations</td>
<td></td>
<td>Stationary concrete foundations/mobile steel foundations</td>
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<tr>
<td>Cold feed unit</td>
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<tr>
<td>Number of hoppers</td>
<td>3/4/5/6-fold cold feed unit</td>
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</tr>
<tr>
<td>Capacity (m³)</td>
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<td>Feed ramp</td>
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<tr>
<td>Loading width (mm)</td>
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<td>3,500</td>
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<tr>
<td>Dryer drum</td>
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<td>Type</td>
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<td>TT 8.22</td>
<td>TT 9.23</td>
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<td>Type</td>
<td>EVO JET 2</td>
<td>EVO JET 2</td>
<td>EVO JET 3</td>
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<tr>
<td>Optional fuels</td>
<td>Heating oil, natural gas, liquid gas, heavy oil, coal dust - available as combination burner</td>
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<td></td>
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<tr>
<td>Burner output (MW)</td>
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<td>11.9</td>
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<tr>
<td>Dust collection system</td>
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<tr>
<td>Output (Nm³/h)</td>
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<td>Screen unit</td>
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<td>Screening</td>
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<td>Screen output (0.4 mm, t/h)</td>
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<td>Hot bin section</td>
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<tr>
<td>17 t</td>
<td></td>
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<tr>
<td>4-fold screening</td>
<td>17-TA4 S/B comb., OA out</td>
<td>17-TA5 S/B comb., OA in</td>
<td>17-TA4 S/B comb., OA out</td>
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<tr>
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<td>5</td>
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<td>55 t</td>
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<td>ECO 2000/3000/4000</td>
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<tr>
<td>4-fold screening</td>
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<td>55-TA4 S/B comb., OA out</td>
<td>55-TA5 S/B comb., OA in</td>
</tr>
<tr>
<td>Bins</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Bins</td>
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<td>4</td>
<td>5</td>
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<td>Weighing and mixing section</td>
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<td>Filler weigh hopper (kg capacity)</td>
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<td>400</td>
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<td>Bitumen weigh hopper (kg capacity)</td>
<td>100</td>
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**Mixed material loading silos**

<table>
<thead>
<tr>
<th>ECO 1250</th>
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<th>ECO 3000</th>
<th>ECO 4000</th>
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</thead>
<tbody>
<tr>
<td>Lowered/adjacent</td>
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**Recycling feed systems**

<table>
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<tr>
<th>ECO 1250</th>
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<th>ECO 4000</th>
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</thead>
<tbody>
<tr>
<td>Middle ring dosing system</td>
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<tr>
<td>Dosing system into the mixer</td>
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<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Other feed options**

- Powder, granulate, bag feed, liquid additive, foam bitumen

*from 80 m² tanks with 2 chambers possible
Added value.

THE TBA RECYCLING SYSTEMS

BENNINGHOVEN offers a wide range of products and services in the field of recycling feed systems.

YOUR BENEFITS:
- Environmentally friendly production
- Multiple cost savings
- Government grants
- Easy retrofitting

Economical and environmentally friendly

In addition, the recycling components are adapted and integrated for the retrofitting of existing systems from all manufacturers according to individual customer requirements. For ECO plants, you can choose between middle ring dosing system or dosing system into the mixer. This strengthens the environmental concept and reduces use of resources.
Always right in the middle.

THE ERGONOMICS, MAINTENANCE, AND HEALTH AND SAFETY CONCEPT

Very good accessibility to all areas thanks to 800 mm wide surrounding access/working platform.

During the development of our systems, we attach great importance to user convenience and a high level of health and safety and functional reliability. The comprehensive and well thought-out concept offers the ideal preconditions for an integrated performance.

YOUR BENEFITS:

- Easy handling on site with plug & work
- Optimum illumination of the work and maintenance areas with LED technology
- Large service openings ensure ergonomic access to the mixer for service and maintenance work
- Safe access to all service and maintenance points (guard rails, ventilation openings, etc.)
- Power and compressed air connection for tools and maintenance work
- Central compressed air maintenance unit for oiler and separator, plus filter
- Intuitive lubrication plan thanks to colour coding of the maintenance intervals (daily - weekly - monthly)
- Service and assembly aids (defined attachment points)
- Modular expansion of functions through bus system
- Key transfer system for increased work safety
The best recipe: more than 100 years of experience.

BENNINGHOVEN CUSTOMER SUPPORT

Maximum customer focus

Our service does not only start when the order is signed or end with commissioning. The comprehensive customer support at BENNINGHOVEN already starts much earlier on in the preparation phase of a project.

Most importantly, this includes complete and competent support to help you find the best possible plant solution. We believe it is important to take into account technical as well as location-related requirements and to develop an appropriate logistics concept.

Our local contacts in the sales and service companies provide comprehensive support for all issues and queries relating to our products.

Among other things, this includes diagnosis and technical support, ordering original spare parts and advice on using our products.

Rapid technical support is our top priority. We guarantee short response times and rapid solutions with a dense network of offices, their experienced service engineers and the additional support from our head factory.

ENVIRONMENTAL REQUIREMENTS:
- Topography
- Industrial area/nature reserve
- Municipal restrictions
- Colours/housing

LOGISTICS CONCEPT:
- Logistics paths/infrastructure on plant and mixing station
- Ship and HGV loading
- Transport planning
- Links between transport and installation
- Approval process

PLANT TECHNOLOGY:
- Technical plant and operating descriptions
- Installation and layout plans
- Emissions measurement
- Safety devices
- Structural calculations
- Advice on current standards

TECHNICAL SUPPORT:
- Troubleshooting
- Application consulting
- Training
- Operator days
- Spare parts
- Prevention and inspection
- Energy optimisation
- Retrofit

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