

# FORUM

56

The Magazine of the

**WIRTGEN GROUP**

[www.wirtgen-group.com](http://www.wirtgen-group.com)

02/2018



## SMARTSYNERGIES

The Power of the WIRTGEN GROUP

WIRTGEN / VÖGELE / HAMM / KLEEMANN / BENNINGHOVEN



## Dear Employees, Partners, Customers, and Friends,

**A**n eventful and successful year for us is drawing to a close. Just like in previous years, we once again succeeded in increasing revenues in 2018 – a new record for the Wirtgen Group. I would like to take this opportunity to thank the entire Wirtgen Group team for their strong commitment.

### The Wirtgen Group and John Deere

It has now been one year since the merger with John Deere became effective. From the very beginning, we wanted to make sure that this organizational change would have no impact on our close relationship with customers. And we succeeded. Our customer focus, which is reflected in our slogan “Close to our customers,” has not changed – if anything, it has intensified over the past twelve months.

Among other measures, this has been the result of our efforts to continuously expand our sales and service infrastructure in order to be closer to our customers: we have established new offices for Wirtgen Limited and Wirtgen Bulgaria, added one additional service location in both China and India, and last but not least, built a completely new facility for Benninghoven that now offers the perfect conditions for the company’s future growth thanks to significantly expanded production capacities. At Wirtgen GmbH, our expansion measures are still in full swing. Everything is geared towards meeting the future needs of our customers even faster and better.

At bauma China 2018, they had the chance to see both John Deere’s and the Wirtgen Group’s product ranges, which complement each other perfectly, together for the first time at a single booth. Irrespective of this, however, the two companies’ separate distribution channels will continue to exist.

### Synergies Are the Foundation of Our Success

And this is exactly what we intend to show our customers at bauma 2019 in Munich and during the preparations for the trade show. This is why we have chosen SMARTSYNERGIES and INNOVATIONS as our theme for bauma 2019. In this issue of FORUM, you’ll discover how perfectly the Wirtgen Group’s machines complement each other to carry out the entire spectrum of road construction applications as effectively and environmentally friendly as possible.

But SMARTSYNERGIES encompasses much more than just our range of products. SMARTSYNERGIES is also synonymous with customer service provided by our worldwide sales and service companies and our dealers. Not only can our customers purchase all of the products they need for their applications from our subsidiaries, but more importantly, they also receive service for all of them from a single source. And thanks to our SmartService, they don’t even have to deal with it themselves – we carry out all of our maintenance services automatically so that their machinery remains in peak condition at all times.

We also support this through the continuous advancement and optimization of all of our products based on feedback from real-world use. That’s why INNOVATIONS are just as important a part of our focus at bauma. Customers can look forward to seeing a number of new developments and enhancements that will make life on the construction site easier for them. We don’t want to give away too much at this point, but we look forward to welcoming you all to bauma in Munich in April 2019.

We would also like to take a moment to thank our customers for the trust they have placed in us over the past twelve months, and we look forward to continuing our partnership in 2019 and beyond.

Best wishes,

A handwritten signature in black ink, appearing to read 'Domenic G. Ruccolo'.

Domenic G. Ruccolo



**FORUM 56 reveals how the Wirtgen Group's product brands work together and the synergies that can be achieved.**

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# Discover SMARTSYNERGIES

The Wirtgen Group is the trendsetter when it comes to innovative road construction machinery – true. But how do the Wirtgen Group's different product brands work together? And how does this benefit customers?



SOIL STABILIZATION AND COMPACTION

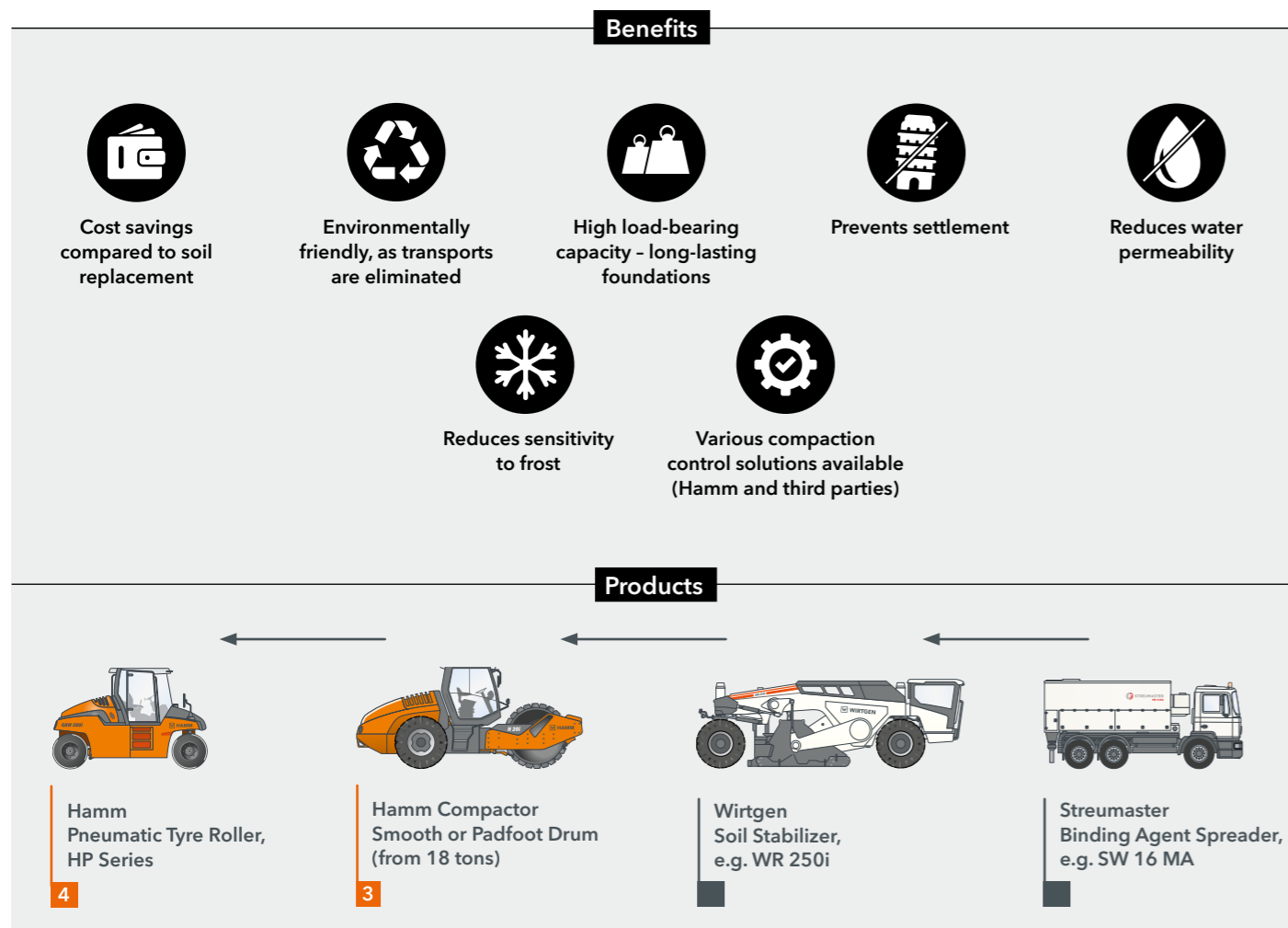
# Strengthening the Foundation

Roads and buildings built to stand the test of time require a foundation with a high bearing capacity. And this applies to every layer below the road surface or structure, from the subgrade to frost protection and base layers. Through soil stabilization and high-grade compaction, these layers gain the necessary load-bearing capacity and can act as the foundation for long-lasting roads and buildings. In short: building for the long term begins with the soil.

*Surface and  
Base Course**Surface Layer**Binder Course**Base Layer (Bituminous or CTB)**Frost Protection Layer**Removal**Subgrade**Road Bed**Filling**Sub-Base*

Lime, cement, or mixed binding agents are distributed over the surface by binding agent spreaders. Soil stabilizers thoroughly mix the binding agents with the soil – sometimes with and sometimes without the addition of water, depending on the requirements. The result is a soil mixture with high compressive and shear strength; long-lasting water and frost resistance; and long-term volume stability. This mixing process is carried out in layers up to a maximum thickness of 50 cm. This is how dams that can withstand enormous loads over the span of many years – some of which are several meters high – and stable substructures are built all over the world each and every day.

The subgrade is also frequently covered with a frost protection layer. Impact crushers are an ideal tool for producing the graded aggregates needed for this purpose. Special pavers are available to lay the aggregate, and compaction is carried out by compactors or tandem rollers. ■



# Load-Bearing for the Long Term

Soil stabilization literally lays the foundation for long-lasting roads and structures.

There are two main criteria. The first is that the binding agent and, if necessary, the added water must be thoroughly and homogeneously mixed into the soil. Second, the mixed materials must be compacted thoroughly and uniformly.

Soil stabilizers and tractor-towed stabilizers from Wirtgen are ideally suited for mixing the soil, because the tractor-towed stabilizers (WS series) and soil stabilizers (WR series) are equipped with powerful milling and mixing rotors to mix the existing soil. They can also selectively add water via an injection bar. Finally, a pressurized scraper screeds the material evenly. This means that the machines produce a level surface that can be optimally compacted by rollers.

Since the hydraulic binding agents can only be processed for a limited period of time, the soil must be compacted as soon as possible after mixing to stabilize it. Depending on the soil composition, the binding agent, and the ambient temperature, you have between 1.5 and 4 hours.

Yes. Compactors from Hamm are perfect for this job, offering not only the right operating weight and working width but also the necessary performance in other areas such as engine output, maneuverability, and off-road capability.

In addition, the effective depth of compaction is also important. Hamm's heavy vibratory compactors can effectively compact layers up to 50 cm deep.

Hamm has developed the HCQ Navigator for this purpose. This intelligent system shows where and how often the soil has been compacted and whether the necessary level of compaction has been achieved. This also makes it very easy to document compaction by layer.

All soil stabilization operations can be carried out using Wirtgen, Hamm, and Streumaster machines as well as graders from John Deere. In this context, customers can fully rely on the machines' performance – and on the product range being perfectly tailored to the process. In addition, numerous special solutions are available for all aspects of soil treatment, such as the S-Pack soil stabilizer for dust-free work, the padfoot compactor for compacting soil with a high moisture content or the VC compactors with a tool changing system and the binding agent spreaders from our system partner Streumaster. Last but not least, our local colleagues' expertise, which includes thorough advice from our experts, also plays an important role. ■



**Dr. Axel Mühlhausen,**  
Hamm Product  
Manager for  
Application  
Engineering



When it comes to compaction, surface performance, precise steering, and compaction force are critical to quality and cost-effectiveness – all properties of Hamm's heavy compactors.

## FROST PROTECTION LAYER

# Preventing Frost Damage

The frost protection layer keeps water from rising into the pavement, and as a result, prevents frost damage to the surface layer. For this purpose, rock is crushed and screened into graded aggregates, which are then laid and compacted. The graded, compacted aggregates ensure that the layer is sufficiently permeable to water and disrupts the soil's capillarity.

### Benefits



Optimal material preparation by crushers



Cost-effective laying with pavers



Special paver has low wear and tear



Outstanding compaction performance



Optimized material consumption, because only as much material is used as is needed.

### Products



Hamm, Heavy Smooth-Drum Compactors

3



Vögele Heavy-Duty Road Pavers

2



Kleemann Impact Crusher, e.g. MR 130 Z EVO2

1




JOHN DEERE

# BUILDING THE FUTURE TOGETHER.



John Deere is a leading provider of construction equipment. With the addition of the renowned Wirtgen Group products, we now offer a truly comprehensive roadbuilding solution, from earthmoving and material handling to paving and rehabilitation, in markets around the world.

See us together at Bauma in Munich.



SURFACE LAYER REHABILITATION

# Fast and Effective

Roads have to withstand heavy loads, which over time lead to fatigue and deterioration and cause serious long-term damage. As long as only the top layer of the road structure is affected, surface layer rehabilitation is an appropriate maintenance measure.

The W 250i cold milling machine with 3.8 m milling drum assembly accurately removes the damaged surface layer in no time at all.

**T**he focus of maintenance work is usually on improving surface quality. This includes keeping the surface watertight and ensuring that drainage measures are effective so that no water on the road surface or along the edge of the road can cause damage such as ruts, potholes, fractures, and cracks on the asphalt surface.

Heavily trafficked roads are lifelines for the regions and cities that are connected by them. This is why contractors and public authorities also have to consider the effects of construction sites on traffic and the economy when planning the maintenance of important connecting roads. This is one reason why surface layer rehabilitation is so common in road maintenance – because of the speed with which it can be completed.

Only an undamaged asphalt surface layer can fulfill its role of preventing the penetration of surface water into the bituminous surface layer and ensuring that the surface remains safe to drive on for many years. This is why during surface layer rehabilitation, the damaged asphalt layer is removed and replaced with fresh hot mix asphalt (HMA). The challenge in this process is to only remove and replace the damaged layers of the road structure – while at the same time obstructing traffic as little as possible. As long as the road bed is not damaged, this is an adequate solution.

### Profile-Perfect Milling Lays the Foundation

The maintenance process begins with the cold milling machine. Its job is to remove the asphalt surface layer and lay a level base for the subsequent asphalt paving work. The removal of asphalt pavements via cold milling is unrivaled in terms of both logistics and speed of execution. As the market leader, Wirtgen offers the widest range of cold milling machines. The results of the milling operation play a pivotal role in determining the quality of the new surface layer to be paved, its functional properties, and the efficient and cost-effective completion of further construction work. During surface layer rehabilitation, the cold milling machine prepares the surface perfectly so that the asphalt paver can begin to work next without the need for corrective measures.

### Paving High-Quality Hot Mix Asphalt

After the milling work is completed, pavers lay a new surface layer which is then compacted by compactors. The material of choice for surface layer paving is HMA with the corresponding specifications. Even if the binder layer was damaged during milling, the surface layer generally consists of only one asphalt layer, because paving different layers of material would require more preparation and increased logistics, making it impossible to complete the job quickly.

Asphalt consists of rock, filler (rock flour), and bitumen, which are thermally processed into a material mixture at high temperatures. This mixture can be produced either in batches or continuously in an asphalt mixing plant. Benninghoven is the Wirtgen Group specialist for high-quality, batch-production as-

phalt mixing plants. Here, the components of the asphalt mixture are first weighed before they are mixed in batches in the asphalt mixing plant according to a specific recipe. The batch production process is very flexible, since the recipe of the mixture can be changed for each batch. This allows Benninghoven asphalt mixing plants to easily deliver material for various projects within a tight time frame.

Ciber is the Wirtgen Group brand that specializes in continuous asphalt production and is available in Latin America, Africa, Oceania, and Southeast Asia. In the continuous process, the production cycle runs without interruption and the asphalt mixture is not produced in different batches.

### Everything Level – Even after Paving

In conventional asphalt paving, it is important to work continuously and to avoid the impacts that can be caused by trucks connecting with the paver in order to transfer the asphalt mixture. Vögele pavers can meet both challenges in jobs ranging from highway construction to winding city streets. All of the material conveying systems installed in the pavers are designed for conveying and distributing large quantities of material, and the conveyors and augers are equipped with particularly powerful, separate hydraulic drives.

As a specialist in paving base and surface layers, Vögele consistently leads the field. The “dash 3” generation of innovative, environmentally friendly, and cost-effective asphalt pavers are based on state-of-the-art, easy-to-operate technology.

One highlight for surface layer rehabilitation is the Vögele PaveDock Assistant, which significantly improves communication between the paver operator and the driver of the feed vehicle and ensures that the mix is fed to the paver safely and smoothly. In addition, every “dash 3” paver is powered by a modern, powerful, and extremely reliable diesel engine. It ensures that the pavers execute their paving operations precisely at the defined pave speed. This precision has a significant impact on the cost-effectiveness of surface layer rehabilitation projects. ➤



Hamm following behind Vögele has proven to be a successful approach to surface layer rehabilitation and road construction in general.

## Benefits



Rapid execution on site,  
minimal preparation,  
simple logistics



Improved surface quality

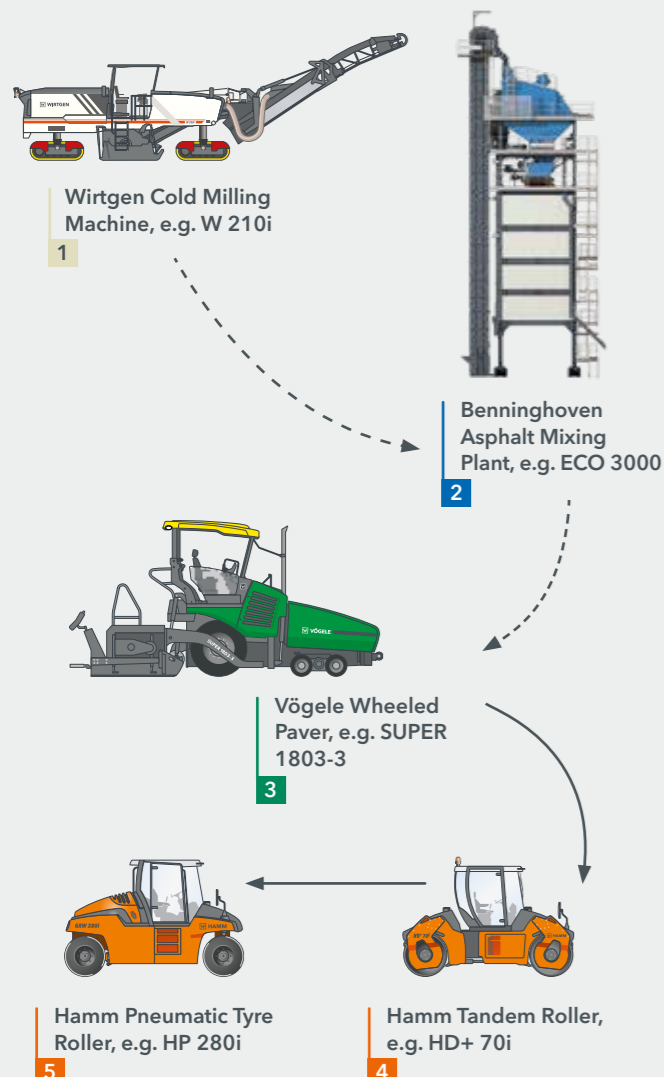


Can be completed  
with standard  
equipment



Extends the service life of  
the road structure

## Products



## The Perfect Surface

The complete, uniform compaction of the asphalt surface is essential to maximizing the performance of the newly paved asphalt. The purpose of compaction is to bond the asphalt-coated aggregates together to achieve stability and resistance to deformation (or rutting), while reducing the void content of the mixture and improving its durability.

By paving with high-compaction screeds, the compactors moving behind the paver achieve the final density specified by the customer in fewer passes. In most cases, the road paver is designed for either high compaction or fast speed, which affects the number of passes required. The fast and high-grade compaction of the asphalt surface must be carried out by high-performance asphalt rollers while the asphalt is still hot (~160 °C to 100 °C). The ideal temperature range depends on the composition of the mixture, the thickness of the pavement, and the type of bitumen used.

Choosing the right compactor is an extremely important step. Hamm tandem rollers with vibration and oscillation guarantee fast, cost-effective, and high-grade dynamic compaction. Tandem rollers with an oscillating and a vibrating drum are particularly suitable for achieving higher degrees of compaction than tandem vibratory rollers, and save time due to a lower number of passes. In this case, one drum oscillates (tangential shear forces) while the other drum vibrates (vertical forces), which significantly increases the compaction effect.

Working with reliable equipment is essential to achieving the high level of performance and speed required on the job site. It is also critical that this maintenance activity is carried at the right time before the road quality drops drastically. Then the pavement and asphalt base layer can remain untouched for countless years. With the 360° machine solutions from the Wirtgen Group, the maintenance cycle can be efficiently closed so that one section of road's milling, paving, and compaction processes can be carried out in the shortest possible time. ■

## INTERVIEW: BERND HOLL

# Always Staying at the Forefront

How cold milling machines improve the overall quality and cost-effectiveness of road rehabilitation.

## Why is cold milling such an important part of the rehabilitation process?

The condition of the milled surface has a major impact on the quality of the new surface layers, their functional properties, and the cost-effectiveness and efficiency of further construction work. This means that in order to pave surface layers with a uniform thickness and avoid the need to make cost-intensive corrections by paving subsequent asphalt leveling layers, it is important to achieve an even, true-to-profile milling result.

## How do I achieve an even, true-to-profile milling result?

With the right cutting technology and precise leveling. Leveling aims to control the milling depth and milling slope automatically and as precisely as possible, based on a reference line. In practice, copy milling by scanning a reference line is the standard method. But with the Wirtgen Multiplex leveling system in combination with a wide variety of sensors, much more is possible than just copying. For example, three sensors on each side of the machine scan the height along the same reference line at large distances. Our Level Pro automatic leveling system averages the three measured values to produce an extremely level milled surface that takes the specified milling depth into account. This is an excellent way to compensate for longitudinal unevenness. In addition, it's possible to create defined surface profiles – e.g. predefined transverse tilts or crown profiles. Completely new surface profiles can be created with 3D milling.

## And how about the desired texture?

The parameters milling drum line spacing, milling speed of the machine, and milling drum speed have a significant influence on the geometric shape of the milled surface. While larger line spacings, higher milling speeds, and low milling drum speeds produce a rougher surface, small line spacings, low mill-



**Bernd Holl,**  
Product Manager  
Cold Milling  
Machines  
Wirtgen

ing speeds, and high milling drum speeds produce a finer surface. Standard milling drums with a line spacing of 12 mm, 15 mm, or 18 mm are ideally suited for removing one or more layers and, at a medium milling speed and medium milling drum speed, subsequently ensure that the milled surface and the new layer bond well.

## What role do cold milling machines play in asphalt recycling?

Thanks to modern machine technology, it's possible to remove the surface layer, binder course, and base layer separately and recycle them separately. This increases the sustainability of the milled material recycling process. The removal of problematic building materials is just as possible as the normal separation of high-quality surface layers with a high bitumen content. Homogeneously sorted milling means cost-effective recycling. ■



ROAD REHABILITATION: PAVING THIN LAYERS HOT

# A Streamlined Solution

If only the top layer of a road is damaged, you don't have to replace the entire road surface. A particularly cost-effective and environmentally friendly alternative is the process of "paving thin overlay hot onto a sprayed seal."

**P**aving thin layers hot is perfect for roads in need of rehabilitation that only exhibit surface damage, a lack of grip, or unevenness. This makes it possible to significantly improve the surface properties of a deteriorating road, such as grip, evenness, and noise reduction, over a longer period of time.

First, cold milling machines with fine milling drums are used to remove surface deformations and create an even, slightly roughened road surface.

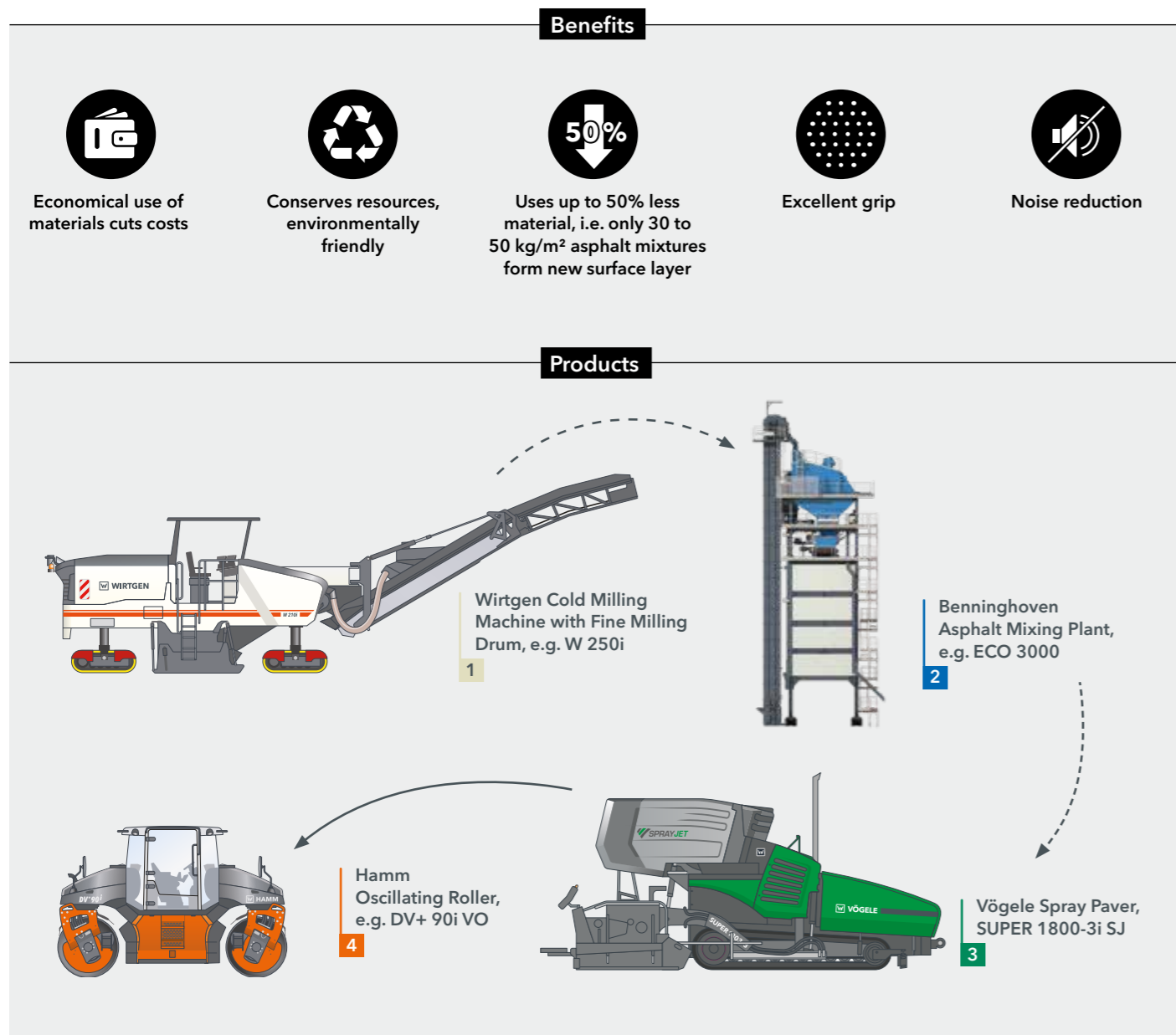
### Spray Paver Perfect for This Job

This surface texture has the ideal properties to ensure an excellent bond with the thin layer of asphalt to be applied. The sub-base must be thoroughly cleaned before further processing. A paver with a built-in spray module is the preferred choice for paving thin layers hot. It automatically applies a tack coat

of polymer-modified bitumen emulsion to seal the base. At the same time, it paves a thin asphalt surface layer just 1.2 to 2.0 cm thick.

### Oscillation Preferred

Compaction is a major challenge when paving thin layers hot, as it requires the layers to be compacted uniformly but without causing surface unevenness. Dynamic compaction with oscillation is ideal to prevent damage to the underlying cold layer during compaction. Static compaction is another alternative, but should be carried out without vibration. ■



### INTERVIEW: FRIEDHELM PAHLKE

## A 50% Reduction in Material Consumption

Cost-effective, reduces noise, and is environmentally friendly – paving thin layers hot is impressive on all levels.

### What needs to be kept in mind when it comes to this method?

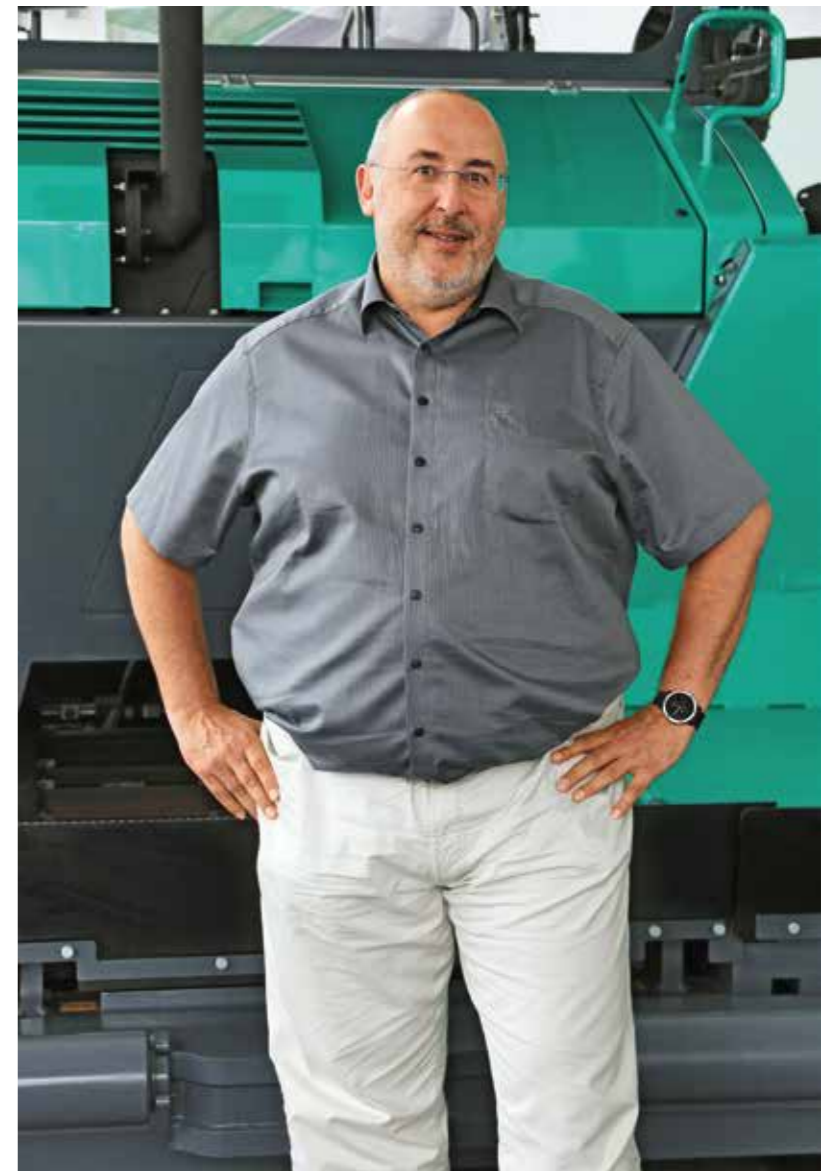
One thing is certain – paving thin layers hot only works if the base is sealed. It is important that the emulsion is applied uniformly over the entire surface and that the emulsion film is not damaged, i.e. torn open, before being covered with asphalt. Spray pavers are perfect for this. They make it possible to pave the asphalt directly after the emulsion has been sprayed on. This prevents the emulsion film from being “rolled up” by the tires of the transport vehicles, the feeder, or the paver. The amount of emulsion can be precisely controlled. This is extremely important because the amount of emulsion required is highly dependent on the condition of the layer that needs to be covered and the quality of the asphalt. This is what Vögele’s spray paver technology does to perfection. With Vögele’s spray pavers, you can set spray rates from 0.3 kg/m² to over 1.6 kg/m². And this is exactly what counts in everyday use.

### What role does the asphalt mixture play?

A major role. In 90% of the cases in Germany, the asphalt mix DSH-V 5 is used, an asphalt mixture that lies between stone mastic asphalt and asphalt concrete on the grading curve. It has a higher void content than conventional asphalt. The bituminous emulsion is sprayed onto the surface to seal it beforehand.

### What needs to be kept in mind during final compaction?

The binder accumulates artificially on the underside of the asphalt layer. The asphalt mixture itself only contains enough binder to ensure that the surface of the DSH-V layer doesn’t have to be roughened after paving, as is otherwise the case with all other rolled asphalt layers. The surface immediately exhibits the necessary grip. Spreading sand on the surface should



be avoided. We recommend dynamic compaction with oscillation or static compaction. We don’t recommend using vibration. In order to retain the noise-reducing properties of the mixture, pneumatic tyre rollers shouldn’t be used during final compaction. Admittedly, noise reduction is not quite as high as with OPA (open-pored asphalt), but it is significantly higher than with classic, dense asphalt surface layers.

### What are the SmartSynergies benefits for the customer in this process?

Our customers benefit from the expert advice we provide at our locations. Together, the Wirtgen Group can supply perfectly compatible technologies for this process’s entire value chain – from the cold milling machine with fine milling drum to the mixing plant and spray paver to the right compaction technology. We are pioneers in all of these technologies, so our customers always receive leading products, reliable service solutions, and expert application consulting from a single source. ■

**Friedhelm Pahlke,**  
Head of Sales,  
Germany, at  
Vögele

## COLD IN-PLACE RECYCLING

# Green Road Rehabilitation

Once the bearing capacity of the asphalt surface layer has been compromised, the road structure must be completely rehabilitated. The trend is currently moving towards environmentally friendly and cost-effective solutions that involve recycling the damaged road surface.

**D**uring the cold in-place (or in-situ) recycling process, the reclaimed material does not leave the construction site at all, but is processed on the spot and reused immediately. This not only eliminates the need for trucks to make frequent trips to the processing station, but also reduces construction times.

## One Technology, Numerous Methods

As a pioneer in cold recycling, Wirtgen offers different technologies and processes that can be used in accordance with the conditions on-site. The basic technology is the same for all cold recyclers, however: small quantities of cement are spread out ahead, the asphalt layer is granulated to the desired depth, the granulate is mixed with the binding agent and water as well as bitumen emulsion or foamed bitumen, then repaved and compacted.

## The difference lies in the method of paving:

- When using the Wirtgen cold recyclers of the CR series, an asphalt paver is usually used. The homogeneous material prepared by the cold recycler is transferred directly to the asphalt paver's material hopper, where it is paved and pre-compacted.
- With the WR series of cold recyclers, an additional paver is not required. Before compaction, the material is finely profiled by a grader (Page 28/29).

All cold recyclers are supplied by water and, if necessary, emulsion or bitumen tank trucks driving ahead of them. ➡



Cold recycling project in San Francisco, USA.



## Environmental Protection & Cost Efficiency

**Up to a 90%**  
reduction in material transports

**Up to a 50%**  
reduction in binding agents

**Up to a 90%**  
reduction in resources consumed

**Up to a 100%**  
reduction in  
disposed materials

**40 %**  
cost saving



## Short Construction Time



## Safety

The Wirtgen cold recycler transfers the RAP directly to the paver's material hopper for paving. This is followed by compaction.

Hamm HP 280i  
Pneumatic Tyre  
Roller

Hamm HD+ 140i  
Tandem Roller

Vögele  
SUPER 2000-3i  
Paver

Wirtgen  
Cold Recycler  
W 240 CRi / W 380 CRi

Bitumen

Water

Streumaster  
Binding Agent  
Spreader



## The Preferred Binding Agent: Foamed Bitumen

Foamed bitumen is manufactured by injecting small amounts of water and air into heated bitumen under high pressure. The water then evaporates and causes the bitumen to foam up abruptly to between 15 and 20 times its volume. The foam is then added directly to the mixer via injection nozzles and thoroughly blended into cold and moist aggregates. The quality of the foamed bitumen is primarily defined by the parameters "expansion" and "half-life." This is because the greater the expansion and the longer the half-life, the easier it is to process the foamed bitumen.

## Asphalt Rehabilitation as a Moving Construction Site

Cold recycling using foamed bitumen as a binding agent has become an established method worldwide that has already increasingly moved into the focus of road authorities and construction companies for the rehabilitation of roads and is already being tendered as a standard procedure in some countries. It makes it possible to produce flexible and long-lasting layers. These create the perfect foundation for the final asphalt layer with reduced thickness. Foamed bitumen is produced from normal bitumen at a temperature of approx. 175°C using state-of-the-art technology. In the in-situ design, microprocessor-controlled injection systems built into the Wirtgen CR series as well as the WR series of cold recyclers precisely inject the binding agent into the aggregate. This means the project can be carried out as a moving construction site.

## Application Expertise Included

In order to achieve perfect results, extensive preliminary analyses of the entire road surface and a thorough test of the suitability of the foamed bitumen mix are required. Wirtgen not only offers the right technology for this – customers around the world can also take advantage of Wirtgen's comprehensive range of consulting services at any time, and Wirtgen experts and road construction engineers also provide on-site assistance during customer projects. ■



The cold recycling process carried out by a tank truck, WR 240 cold recycler, and Hamm compactor leaves behind a stable surface that can be opened to traffic without a new surface layer, if necessary.



### SmartSynergies Benefits:

- Product solutions for the entire value chain
- Application consulting services for the entire process
- Perfectly compatible machine technology
- Sales and service from a single source
- Cutting-edge technologies
- Future synergies: technological advancements thanks to collaboration between Wirtgen, Vögele, Hamm, and John Deere

INTERVIEW: MARTIN DIEKMANN

## Environmentally Friendly, Cost-Effective, and Safe!

Cold in-place recycling is currently very popular.

Why is cold in-place recycling so environmentally friendly?

First and foremost, because the material from the existing road surface is recycled 100%. This drastically reduces the amount of material that needs to be transported from or to landfills or quarries. Recycling also consumes significantly less total energy than all other rehabilitation options.

In addition to being better for the environment, it also cuts costs for ordering authority as well, correct?

That's right, it saves both transport and disposal costs. But cold recycling offers further advantages. Recyclers achieve high production rates that significantly reduce construction times compared to most alternative rehabilitation methods.

No wonder, then, that cold recycling has long been established as a standard process in many countries. It is the solution for the sustainable, economical and rapid rehabilitation of old transport networks. And the need for rehabilitation is undoubtedly there.

What are the synergy effects for the Wirtgen Group's customers?

The Wirtgen Group subsidiaries not only offer complete, perfectly compatible machine technology from a single source, including the necessary laboratory equipment for preliminary tests. We also offer our customers comprehensive application consulting services and, in the case of major projects, expert support during construction work from our application experts. And anyone who wants to first become familiar with the subject can participate in our training programs. Our experts are happy to pass on their practical knowledge to our customers. ■



**Martin Diekmann,**  
Product Manager  
for Cold  
Recycling at  
Wirtgen





The cold recycling mixing plant and crusher are set up in the immediate vicinity of the construction site.

## COLD IN-PLANT RECYCLING

# Crushers and Mixers On the Move

If the mixing plant is located too far away or the construction site doesn't meet the logistical requirements to conduct the entire recycling process in one pass, cold in-plant recycling is often the perfect solution.

**D**uring cold in-plant recycling, a mobile cold recycling mixing plant is set up near the construction site. The materials to be recycled are brought to this plant by truck, processed, and transported back to the construction site by truck as a high-quality finished product and directly used to pave the road surface. This approach is popular in road construction, but is also possible in demolition recycling. The process makes financial and environmental sense because the short distances between the construction site and the cold recycling mixing plant save time, money, and miles driven. Various machines and plants from the Wirtgen Group work together during the cold in-plant recycling process.

### Demolition Recycling

If a building is demolished, for example, the building's concrete can be recycled. Within this process, we can unlock synergies between Kleemann and Wirtgen plants. First of all, the concrete must be crushed. There is often a challenge to overcome in this regard, however: reinforced concrete. With reinforced concrete, you often don't know exactly how hard the concrete is and how much steel it contains. This can push many crushers to their limits.

The MOBIREX MR 130 Z EVO2 from Kleemann is perfect for this job. The mobile impact crusher has an optimized inlet geometry for better feed characteristics. In addition, the crusher inlet flap, which can be raised hydraulically, and the upper crusher impact swing arm prevent jamming at the entrance to the crusher unit. In addition, the continuous feed system via sensors ensures that the crushing chamber is filled in an ideal manner.

Overload protection shields the crushing unit from large metal parts such as T-beams. Sensor-controlled hydraulic cylinders allow the impact swing arm to move back when an unbreak-



The MOBIREX MR 130 Z EVO2's Continuous Feed System features sensors that ensure the crushing chamber is filled in the ideal manner.

able part enters the crushing chamber. The metal part is diverted and transported to the crusher discharge belt, which can be equipped with an optional magnetic separator. The electric or permanent magnet attracts the metal part and throws it to the side so that the crushed concrete is fed into the secondary screening unit without reinforcement.

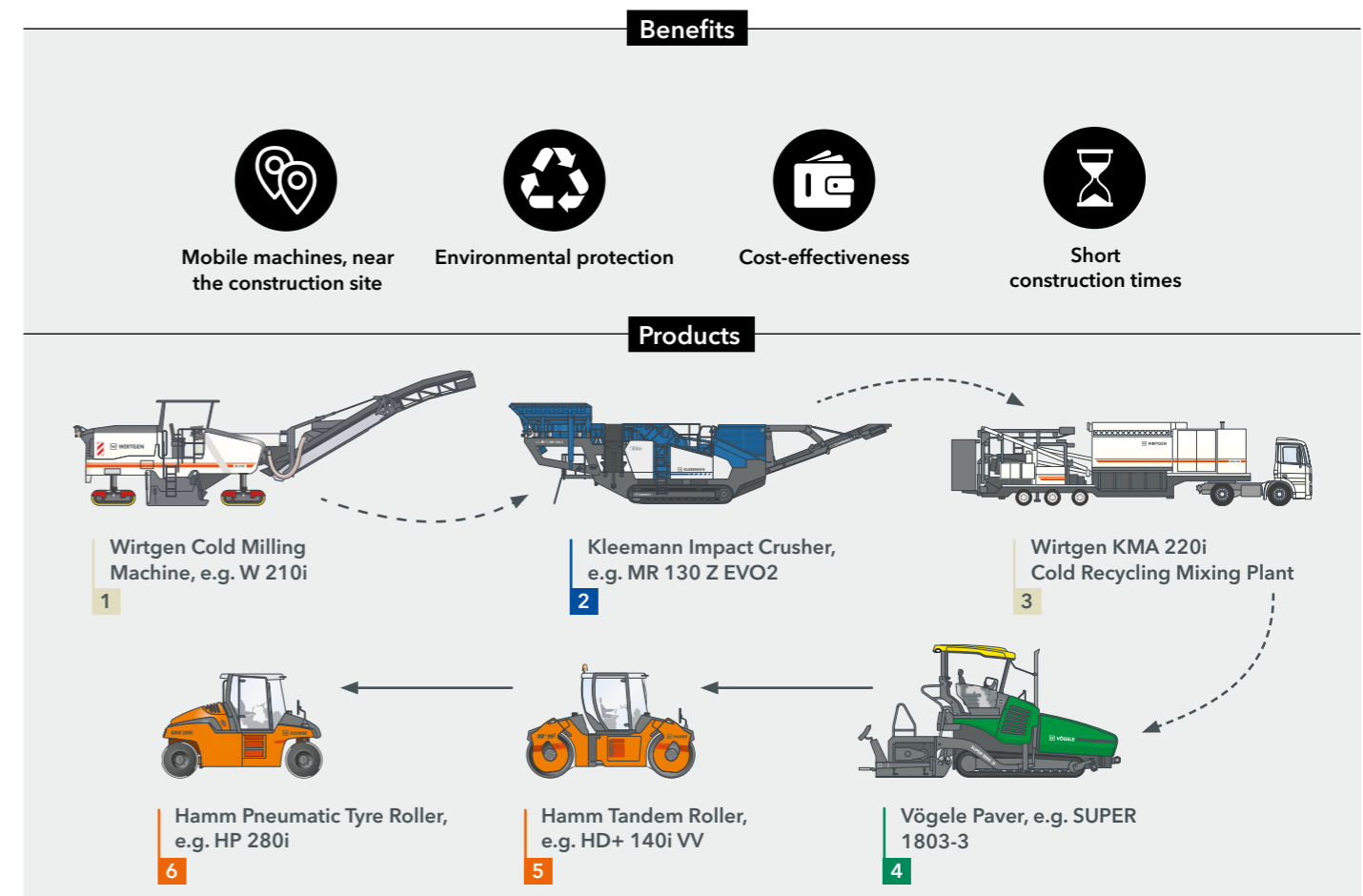
The secondary screen sorts the crushed concrete into different grain sizes. Oversized material is returned to the crusher unit via the oversized material return belt in a closed loop. All of the MOBIREX MR 130 Z EVO2's functions can be controlled via the simple and intuitive SPECTIVE control concept. For example, the crushing gap can easily be adjusted to the desired size via touch – even while the rotor is in operation. It couldn't be any easier or safer.

The concrete aggregate with the desired gradation is then fed into the Wirtgen KMA 220 via wheel loader or directly from the crusher. The cold recycling mixing plant mixes the concrete with binding agents and water to produce a high-quality final product, e.g. for a hydraulically bonded base layer that can then be immediately used for repaving. Due to the mixing location in the immediate vicinity of the demolition site, not much time passes between demolition and paving in the cold recycling process.

### Example Application: Road Rehabilitation

Even more machines from the Wirtgen Group can be combined in road construction. During road rehabilitation, the layers in need of rehabilitation can be milled out with a Wirtgen milling machine. The removed material is then transported by truck to the mixing site near the construction site. These materials are then processed in a Kleemann impact crusher at the mixing site. The milled material is transported by a Deere excavator or wheel loader to the crushing plant where it is crushed down to the required aggregate size.

The cold recycling mixing plant is fed by a John Deere wheel loader or directly from the crusher. In the cold recycling mixing plant, the recycled material is mixed with water and binding agents such as foamed bitumen, bitumen emulsion, or cement. The cold mix is then transported back to the construction site, where it is paved using a Vögele paver. Last but not least, the surface is compacted by a Hamm compactor. This is how the Wirtgen Group's machines and plants complement each other perfectly. Where one plant stops, the next begins its work – for perfect results from a single source. ■



ASPHALT RECYCLING

# The Asphalt Cycle

In industrially developed countries, significantly more roads are rehabilitated or extended than completely new roads are built. But what happens to the old road surface?



R

ecycling asphalt is an economic imperative in order to conserve natural resources. Using the maximum amount of recycled asphalt not only protects the environment, it also positively affects RAP prices.

Benninghoven offers a wide range of “hot and cold” processing technologies designed to produce the highest quality RAP. The recycling components can also be individually customized and integrated to retrofit existing asphalt mixing plants.

The maximum theoretical amount of asphalt that can be added depends largely on its grading curve – or, to put it another way, on the quantity, size, and composition of its constituents. As a result, one goal must be to align the grading curve of the crushed asphalt as closely as possible to the desired grading curve of the final asphalt product.

This is where the MOBIREX MR 130 Z EVO2 mobile impact crusher from Kleemann, equipped with a secondary screening unit, comes in. The ability to flexibly adjust the rotor speed and the crushing gap via a touch panel makes it possible to achieve the desired grading curve.

First, however, the asphalt must be recovered by removing individual layers of the road structure. Cold milling machines are perfect for this because they are capable of selectively milling these layers. As a result, it's possible to remove the surface layer, binder course, and base layer separately and recycle them separately. ■



### Hot Gas Generator with Counterflow Parallel Drum System

- More than 90% + x recycled material can be added
- Highest possible rates of added recycled material
- Material heated indirectly
- Lowest emission values  
Cges < 50 mg/Nm<sup>3</sup>
- Total energy required to operate the plant decreases
- RC material is already heated to processing temperature (160°C) through this process

Benninghoven BA RPP 4000 asphalt mixing plant (hot gas generator with counterflow parallel drum system)



The Max Bögl Group's BA RPP 4000 at the Sengenthal site meets all the requirements for the most sustainable operation possible. It forms the backbone of many road construction sites in the Nuremberg region of Germany.

INTERVIEW: DIRK AULER

# Go with the Counterflow

Making new roads from old ones.



## How can I add as much recycled asphalt as possible?

The best way would be to split the old asphalt back into its original constituents. The old asphalt can then be reused in the mixing plant in accordance with the grading curve of the desired final product. We recommend using the "hot gas generator with counterflow parallel drum system" for this process. This makes it possible to achieve rates of 90% + X added recycled asphalt.

## How exactly does this work?

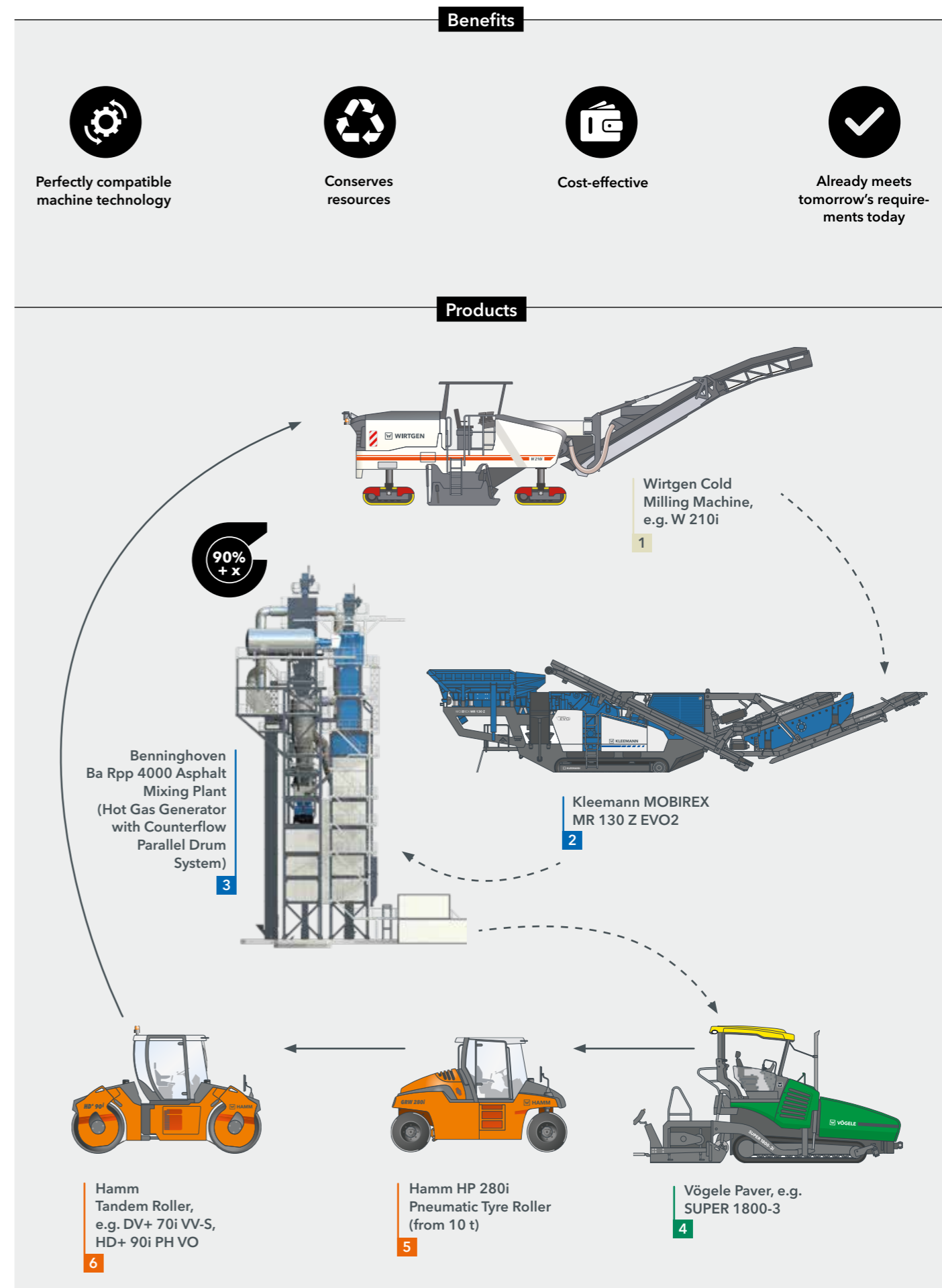
The recycled material is heated in a countercurrent. This means that the material flows towards the heat source in the drum. This allows higher material temperatures to be achieved while at the same time reducing the exhaust gas temperature. The outlet temperature of 160°C corresponds to the further processing temperature, the exhaust gas temperature stands above the dew point, at approx. 100°C. One positive effect for the white material is that the material no longer has to be overheated, which leads to a significant reduction in energy.

The entire process is only possible by using a hot gas generator, because direct firing would burn the recycled material and make it unusable. The burner, hot gas generator, drying drum, separating hood, and air circulation system are designed to work together perfectly.

## How else can I conserve resources when mixing asphalt?

In general, asphalt production materials should be stored in a dry place to protect stockpiles and feeder belts from the rain. When recycling reclaimed asphalt, moisture reduction is an issue that begins as early as the milling process. Wirtgen milling machines cut water consumption by up to 20%, making the entire process more energy-efficient, because the following rule applies: 1% less water in the source material equals one liter less heating oil required per ton of asphalt during further processing into RAP in Benninghoven asphalt mixing plants. ■

**Dirk Auler,**  
Product Trainer  
at Benning-  
hoven

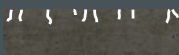


Our SMART**SYNERGIES** offer the right solution for every challenge:

- Cost-effective
- Environmentally friendly
- From one source
- Top-quality results

# Asphalt

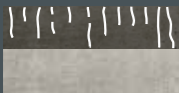
## Paving Thin Layers Hot



Damage to road surface



## Surface Layer Rehabilitation



Damage to road surface



## The Asphalt Cycle



RAP



# Cold Recycling

## Cold In-Place Recycling



Compromised bearing capacity of the asphalt surface layer



## Cold In-Plant Recycling

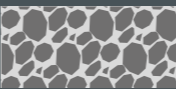


BSM



# Earthwork

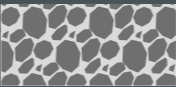
## Soil Stabilization



Increasing bearing capacity



## Frost Protection Layer



Preventing frost damage



SALES AND SERVICES COMPANIES

# Getting Closer to Customers

The Wirtgen Group offers best-in-class road and mineral technology solutions combined with outstanding, personalized, on-site customer service through 55 of its own sales and service companies with over 100 locations worldwide.



**A**ll in all, the Wirtgen Group has the broadest range of products for road construction and, as the market leader, also the largest number of machines in the field. This is primarily thanks to the expertise of the Wirtgen Group's long-established sales and service companies located around the globe, which offer comprehensive service, excellent customer support, and unparalleled application consulting.

The experienced local teams are always focused on providing first-class support in line with the Wirtgen Group's value proposition "Close to our Customers." "Each subsidiary is a reflection of the entire organization, maintains direct and personal relationships with customers, and supports them with comprehensive knowledge of our product range and an excellent local service infrastructure or financing solutions," explains Frank G. Betzelt, Senior Vice President of the Wirtgen Group.

### A Partnership with Customers

Delivering a machine lays the foundation for a long-term partnership between the customer and the Wirtgen Group. The Wirtgen Group has a well-structured organization in each market with local experts who are continuously trained and receive information directly from the company's main facilities. At the same time, they are highly knowledgeable when it comes to local conditions and can apply their expertise to the specifications and distinctive characteristics of their local market.

Whether in the repair shop, on the construction site, with a genuine spare parts service, or through extensive training programs - the sales and service companies always offer their customers tailor-made and market-driven solutions. The customer receives end-to-end support for their entire fleet of machines from a single source, regardless of the Wirtgen Group brand - Wirtgen, Vögele, Hamm, Kleemann, Benninghoven, or Ciber.

### Expanding the Service Infrastructure

The Wirtgen Group continuously invests in the expansion and optimization of its local operations. The most recent example is the construction of the new eighth Regional Headquarters in China, a three-story office building with 3,591 m<sup>2</sup> of office space, plus 2,500 m<sup>2</sup> of hall space - for storage facilities, a repair shop, painting and washing facilities, and a training hall - on a 20,000 m<sup>2</sup> site that also offers further expansion opportunities right from the outset. "We're investing to get even closer to our customers. This center was built especially to serve customers in eastern China, and the focus here is on short response times with fast service," says Ulrich Reichert, CEO of Wirtgen China.



The Wirtgen Group has its own experts in every market.



Genuine synergies: the Wirtgen Group's sales and service companies offer everything from a single source.

Experience from the field is continuously incorporated into the advancement of technologies and services.



Paul Holmes, CEO of Wirtgen Limited, explains that the new Wirtgen Group sales and service company in Great Britain is pursuing the same goals: "The company has grown strongly in recent years and has created many new jobs through the introduction of new products and services. With these expansions, we will continue to focus on ensuring that we offer customers rapid response times and speedy solutions for all their needs."

The Wirtgen Group's local experts are committed to keeping customers up to date on the latest developments. The application specialists provide expert advice on every innovative technology and process such as cold recycling, InLine Pave, oscillation, processing recycled material, or asphalt production. The sales and service companies also offer assistance when it comes to providing and implementing management solutions such as WITOS® FleetView, the Wirtgen Group's own telematics solution. By working hand-in-hand with the Wirtgen Group's subsidiaries as partners, customers gain the ability to continuously enhance their business activities and always take advantage of the latest high-tech solutions. ■

## PART 3: CONSTRUCTION SITE SERVICE

# Reliable

At the Wirtgen Group, providing customers fast and efficient support directly at their construction sites is a top priority. Wirtgen Group customers can rely on a comprehensive service network and on-site solutions to ensure maximum machine availability.

**Additional Customer Support Topics:**

Part 1: Workshop Service/FORUM 54

Part 2: Spare Parts Service/FORUM 55

Part 4: Applications Consulting

Part 5: Training

Part 6: Service Agreements



Well-equipped service vehicles for fast on-site service.

**T**he Wirtgen Group itself has a history as a service provider in road construction, which is why we are familiar with the challenges that our customers face on construction sites worldwide. This is why customer support is so important to the Wirtgen Group. Customers’ machines need to work. This is what our entire service organization is focused on.

Should something go wrong, service technicians are quickly on site and get the machines up and running again. The Wirtgen Group has a dense service network: 55 of its own subsidiaries with over 100 locations and more than 150 authorized dealers.

**A Qualified Service Team**

Whether machines from Wirtgen, Vögele, and Hamm or plants from Kleemann and Benninghoven – the Wirtgen Group’s service technicians are regularly trained at the brand headquarters and know “their” machines inside out. Equipped with special state-of-the-art tools and the Wirtgen Group’s diagnostic equipment, they ensure that malfunctions are quickly diagnosed and rectified and that the machines remain in top condition – from delivery throughout their entire service life.

To keep the worldwide subsidiaries and dealers up to date on the latest machine developments, each Wirtgen Group brand headquarters operates its own training centers and offers comprehensive training programs that are constantly updated to reflect current requirements. Customers also benefit from this expertise, as Wirtgen Group subsidiaries also offer training programs for their customers’ repair shop personnel and machine operators. Wirtgen Group service technicians rely on high-quality equipment



You can rely on the expertise of our field-tested service technicians.

and special tools to simplify or speed up maintenance work, whether it be carrying out preventive inspections, ensuring operational safety, or putting machines back on the road.

A precise diagnosis is the key to speeding up the troubleshooting process. With WIDIAG, the Wirtgen Group’s service diagnosis system, service technicians can easily update software and quickly diagnose machine malfunctions at the construction site. The tool acts as an interface between man and machine and makes it possible to perform specific service diagnostics directly on site.

The Wirtgen Group’s maintenance experts always need up-to-date, easily accessible informational material. Unsurprisingly, the Wirtgen Group also makes this knowledge base available to its customers. With WIDOS, the Wirtgen Group’s electronic documentation system, repair shop personnel, service technicians, buyers, and technical managers can access the key data for all of the products in the Wirtgen, Vögele, Hamm, and Kleemann model series. This tool can be used, for example, to quickly and easily identify components and order them at the push of a button. The digital documentation also includes the complete Parts and More spare parts catalog; operating instructions; electrical, hydraulic and hose diagrams; machine data; and the safety manual.



Knowledgeable and rapid assistance makes day-to-day work on the construction site safer.

**Proactive Maintenance**

The Wirtgen Group continuously enhances its service solutions to prevent incidents from occurring in the first place. Customers can work with their local service partner to create a maintenance plan that schedules preventive maintenance at the right time to keep machines in peak operating condition. Advanced telematics also set new standards in fleet management. WITOS FleetView, the telematics solution from the Wirtgen Group, supports fleet and service management for Wirtgen, Vögele, and Hamm machines. WITOS FleetView offers a clear overview of the customer’s machinery and facilitates maintenance and diagnostic processes.

According to Markus Strunk, head of customer support for Southern and Eastern Europe, Great Britain and France at Wirtgen GmbH: “WITOS is currently the main tool, both for customers and for the Wirtgen Group’s service team.” The system tracks all of a machine’s essential functions such as engine condition, fuel consumption, and load; all of this information is transmitted via automated messages and customized reports. If maintenance is required, a notification is sent 50 hours in advance. “It’s a great planning tool that allows customers to work with their local partner to create an ideal maintenance plan,” says Mr. Strunk. ■

On-site solutions – our service technicians are happy to help you – anywhere and at any time.



#### Milestones

One-Year Planning Stage  
August 2016: Groundbreaking ceremony  
April 2017: Cornerstone ceremony  
Fall 2017: Topping-out ceremony  
July 2018: Benninghoven moves into new facility

BENNINGHOVEN'S NEW MAIN FACILITY

# State-of-the-Art

Only one year and eleven months passed between the groundbreaking ceremony and when the company moved in. As of this past summer, Benninghoven operates the world's largest and most state-of-the-art production facility for asphalt mixing plants. Efficient production processes now unlock new opportunities for sustainable growth for the company.

"Where we used to have two locations, the new production situation now allows us to have the entire production chain under one roof. From prefabrication to shipping, everything flows in a single process. As a result, we will be able to work faster and more efficiently."

**Dr. Heinrich Steins,**  
CEO of Benninghoven

**T**he months before the first asphalt mixing plants produced entirely at Benninghoven's new main facility in Wittlich were able to leave the factory premises this fall were an exciting time for everyone involved. Months that will certainly be remembered. After all, planning, building, and moving into such a large facility with a total investment volume of 130 million euros isn't something that happens every day.

In the meantime, everything is now running at full speed. In this context, the benefits of the new production facility are already having a positive impact. Like, for example, the generous capacities that are perfectly designed for the dimensions of the components of the asphalt mixing plants, some of which are up to 50 m high. Or switching production of the asphalt mixing plants' core components from batch production to flow production. In addition, the control loops for material staging have been redefined. Work is now carried out in efficient processes in accordance with the latest lean management guidelines. To achieve this, the company completely revised its method of processing data and introduced SAP. Together with a number of new machines and plants that the company has invested in, the new main facility offers production technology for maximum precision. In other words, state-of-the-art premium mixing plant manufacturing "made in Germany" – and in higher quantities than were previously possible at the two old locations.

### An Investment in the Future

"The new facility is really something to be proud of. It is designed for longevity and sustainability and is an investment in the future," explains Peter Heßler, construction project manager at the Wirtgen Group. And he should know, seeing as how Mr. Heßler already has experience from four new production fa-

cilities that the Wirtgen Group has built over the years. And it was also because of this long-term expertise that a particular emphasis was placed on working comfort, emission protection, and a pleasant working environment even during the early planning for the new Benninghoven facility.


For example, the innovative layered ventilation system used in the 46,000 m<sup>2</sup> production hall is highly efficient. It combines energy recovery, exhaust air purification, and fresh air conditioning in a single system – and provides clean air to the production floor at a comfortable temperature. A new, unparal-

leled surface technology also contributes to emission protection. For this purpose, powder coating is used almost exclusively. This means that the use of solvents has become almost completely unnecessary. The five-story office building was also planned with foresight. An intelligent lighting system that reduces energy consumption provides pleasant light there. The system uses LEDs equipped with presence detectors so that the light goes out when nobody is in the room.

The facility's new training workshop is also extremely well equipped. The trainees now also have their own adjoining training room for classroom in-

struction and to prepare for exams. Incidentally, Benninghoven's trainees were the first of around 800 employees to move into the new facility at the end of July. And on September 22<sup>nd</sup>, the company held the first event in the training workshop: an "Azubi Day" with the slogan "Workplace of the Future."

### Prepared for Sustainable Growth

And with this new facility, Benninghoven is indeed perfectly equipped for the future. This includes the fact that all core components, from steel construction to the development of complex control systems, 



The generous capacities are perfectly designed to accommodate the dimensions of the asphalt mixing plants' components.

"The safety and health of all our employees was always our top priority when designing our workstations."

**Oliver Fich,**  
Facility Manager,  
Benninghoven

"The new facility is designed for sustainability and longevity – an investment in the future."

**Heinrich Plein,**  
Production Engineer,  
Benninghoven

"In response to increasing order volume, the Wirtgen Group has invested in a completely new facility at the Wittlich site, with the long-term vision and goal of transforming Benninghoven into a leading global company."

**Lars Henrich,**  
Head of Marketing

are developed and manufactured in-house. With unique innovations in the field of asphalt mixing and combustion technology, the company has always been regarded as a trendsetter in the industry. At the same time, quality is a top priority for the manufacturer with a long tradition. Whether a standard product or a specific customer request – Benninghoven offers the right system solution for every market requirement. With this investment in its new main facility, at Benninghoven all signs now point to growth. The stages of expansion of the production facilities necessary for this were already taken into consideration when planning the new facility. ■

➤ [www.benninghoven.com](http://www.benninghoven.com)



Benninghoven develops and manufactures all of its core components in-house.

The training workshop is well equipped and also includes its own classroom.



## Designed for Sustainability



### Innovative Ventilation Technology

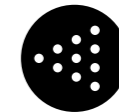
An innovative layered ventilation system provides clean air to the production floor at a comfortable temperature. It combines energy recovery, exhaust air purification, and fresh air conditioning in a single system.

During the summer, the workstations are cooled down to a pleasant temperature at night by pulling in outside air.

The process heat generated by the powder furnaces is either used to heat the hall by means of air redistribution or is discharged from the hall and exchanged with cool air.

The welding fumes generated at welding stations are automatically extracted or displaced by ventilating with clean air. This protects not only all the welders, but also the surrounding work areas from exposure.

With this innovative ventilation technology, Benninghoven has gone beyond the conventional technical standard when it comes to employee protection.



### Modern Surface Technology

At the new facility, powder coating is used almost exclusively. The solvents used in the old facility were almost completely eliminated.



### Energy-Efficient, Air-Conditioned Offices

The air conditioning in the five-story office building is connected to the windows. As soon as a window is opened, the air conditioning system in the corresponding room is switched off. This reduces energy consumption.



### LEDs with Presence Detection

An intelligent lighting system ensures that the light goes out when nobody is in the room. This also reduces energy consumption.



### Shading Concept

When the sun is shining, the blinds are automatically lowered, which prevents the building from heating up.

“Ultimately, the most important thing is that thanks to our new production facility, we can now ship a product of a higher quality to the customer. After all, it’s the only way that we can achieve future growth and this is a basic requirement that every successful company must meet.”  
**Dr. Heinrich Steins,**  
**CEO of Benninghoven**



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FACTS AND FIGURES

Largest Single Investment in the History of the Wirtgen Group

Total investment:	Approx. 130 million euros
Property size:	313,000 m <sup>2</sup>
Production facility:	46,000 m <sup>2</sup>
Five-story office building:	12,000 m <sup>2</sup>

Only **one year and eleven months** passed between the groundbreaking ceremony and when the company moved in.

**400,000 m<sup>3</sup>** of earth were moved, as the original height difference of the building site was around **9 m**.

**125,000 tons** of lime-cement mixture were added to the soil for stabilization, with 2 Wirtgen soil stabilizers and up to 6 Hamm compactors playing the main roles.

During the final months of construction, up to **300** workers were busy working to get the new facility completed.

**800** employees have moved into the new facility from the two old sites.

The generous capacities are perfectly designed for the dimensions of the components of the asphalt mixing plants, some of which are up to **50 m** high.

Possible expansion stages for the growth-oriented company were already taken into consideration during planning.

Benninghoven manufactures premium mixing plants using production technology for maximum precision.



BAUMA CHINA 2018

# Innovative

The Wirtgen Group is unveiling 13 new products for the Chinese market at bauma China 2018. A total of 50 exhibits will showcase the innovative technologies and premium products "made in Germany."

**T**he application-oriented solutions for earthworks, road construction, road rehabilitation, and for processing rock and recycled material help customers complete projects cost-effectively and with outstanding quality.

#### Local Production According to German Quality Standards

The Wirtgen Group has been manufacturing in China for China according to German standards of quality since 2004, and has done so in a completely new facility in Langfang – one of the most state-of-the-art of its kind – since 2015. In addition to the construction equipment manufactured at the main German facilities, some of the innovations in cold milling machines, pavers, and compactors being exhibited at bauma China were also manufactured in Langfang. The machines are specially tailored to the requirements of the local market. Longevity, cost-effectiveness, ease-of-use, and low operating and maintenance costs are what make the local models stand out.

With eight of its own locations, two new service centers, and a dealer network of 35 partners, Wirtgen China has a close-knit and efficient sales and service network that now covers almost all of the Chinese provinces. As a result, the Wirtgen Group subsidiary in China is always close to the customer and can offer solutions from a single source.

#### Innovations from the Product Brands

**Wirtgen** has rounded off its new large milling machine series for the Asian market with the trade show premieres of the W 195 and W 205. In addition, the third and most powerful machine in the series, the W 215, will be on display in Shanghai. The SP 64 slip-form paver is another Wirtgen premiere for China. The inset paver with a maximum paving width of 7.5m and a maximum paving thickness of 450mm guarantees cost-effective and high-precision paving.

**Vögele** will be unveiling a special premiere: the SUPER 1600 L, a rehabilitation pro for small to large construction projects. In addition, Vögele will be exhibiting the right machine for every job, from the small SUPER 700-3 to the large SUPER 2100-3 L. Highlights include the pavers from the Compact Class and the tried-and-tested SUPER 1880 L and SUPER 1880-3 L pavers from the Universal Class. Vögele will also be presenting the Big MultiPlex Ski sensor system, which has been specially designed to meet the specific demands in China and significantly increases quality and longitudinal evenness.



The Kleemann MOBICAT MC 120 Z PRO – low-maintenance and easy to transport.

**Our customers can participate in the large number of earthworks, road construction, airport construction, and recycling projects throughout the country, and our innovative technologies ensure that the projects can be completed easily and cost-effectively."**

Ulrich Reichert, CEO of Wirtgen China.



High-performance compaction: the new Hamm Six-Pack for the Chinese market.



The new SUPER 1600 L from Vögele has already proven itself during the rehabilitation of the 104 National Highway in Yu Yao County.



John Deere will be exhibiting its products at the Wirtgen Group's booth for the first time.



Specially developed for Asian requirements: the new W 195 and W 205 large milling machines from Wirtgen.

The HD 30/35 series of compact rollers from **Hamm**, which are manufactured locally in China, are also brand new. They will be exhibited in Shanghai together with other HD CompactLine tandem rollers from Hamm. The tandem rollers from the 9 t class, the HD+ 90 VO with oscillation, and the HD+ 90 VT combination roller are also new to the Chinese market. For earthworks, Hamm is presenting the new 325 compactor with 25 t operating weight.

From **Kleemann**, both the MC 120 Z PRO track-mounted jaw crusher and MCO 11 PRO cone crusher will be on display at bauma China for the first time. When it comes to ruggedness and efficiency, the two PRO crushers are perfectly designed to meet the demands of quarry work. Kleemann will also be exhibiting the MS 953 EVO mobile screening plant as a representative of the EVO product line, which is primarily known for its versatility and excellent transport properties. ■

➤ [www.wirtgen-group.com/bauma-china](http://www.wirtgen-group.com/bauma-china)

AZUBI TECHDAYS

# Synergies by the Book

At the 11<sup>th</sup> Azubi Techdays in Windhagen, trainees from Wirtgen, Vögele, Hamm, Kleemann, and Benninghoven demonstrated how team spirit and synergy effects within the corporate group can quickly lead to perfect results.



A justifiably proud team after a successful job: in addition to the 69 second-year trainees from all five of the Wirtgen Group's brand headquarters, their trainers are also delighted with the outstanding results and excellent team spirit.

The goal of the event was for the trainees to rehabilitate a road close to the facility on their own initiative – and also have lots of fun.

Dr. Günter Hähn, Senior Vice President Operations for the Wirtgen Group, welcomed the large group of trainees, their trainers and supporting technicians from all of the brand headquarters. “The Azubi Techdays are an ideal opportunity for trainees from all of the Wirtgen Group’s brands to share their knowledge and familiarize themselves with the latest technologies and applications. As a result, they can already become familiar with and exploit the synergies within the Wirtgen Group during their training,” explained Dr. Hähn.

After a brief summary of the upcoming days’ program by Boris Becker, head of vocational and advanced training at Wirtgen GmbH, the first event was a tour of Wirtgen GmbH’s facility. The Wirtgen trainees themselves acted as the hosts, showing the group around. Oliver Laible, a Vögele warehouse logistics instructor, explains why: “It is important to us that the trainees from the site hosting the event lead the factory tour. This is an important part of their learning process and gives them the opportunity to draw parallels with the other facilities and address the issues that are important to them.”

The hands-on activities began in the afternoon, initially for the Wirtgen and Hamm teams, with soil stabilization on a section of road that did not have the necessary bearing capacity to be paved over with asphalt. First, the Wirtgen trainees granulated the soil with a WR 200 without adding any binding agents. Compaction was carried out by trainees from Hamm using an H 7i soil compactor, thus creating the foundation for asphalt paving on the following day.

Trainees in Charge

The next day on the construction site began with the removal of the damaged asphalt surface layer. The trainees had two Wirtgen cold milling machines at their disposal for this purpose – on the one hand, the W 100 CFi compact front loader, the smallest compact milling machine in the product range, and on the other hand, the W 50 Ri, the most powerful half-meter cold milling machine, a rear loader that is particularly suitable for milling work in confined spaces. Since it wasn’t necessary to completely remove the road surface, but instead “only” the surface layer to a depth of between 4 and 6 cm, the 180 meter section was completed in no time at all and the baton was handed over to the trainees from Vögele.

They weren’t content to use only small machines, but instead had a SUPER 2100-3i at their disposal, a Highway Class model with a maximum paving width of up to 13 m and a paving capacity of up to 1,100 t/h – a large paver of the new “dash 3” class that



1. Exposing the manhole covers: a standard job for the W 50 Ri, a challenge for the trainees (for now). 2. The neighbors are watching in awe – that’s what spurs them on. 3. Good work – the surface is flat! 4. Patricia Simic, an industrial technician trainee at Wirtgen, has the W 100 CFi under control.

can easily and cost-effectively handle even the largest paving jobs. This meant that paving the surface layer with a total of 220 tons of asphalt was indeed a challenge for the trainees, but not for the paver.

The team from Hamm was able to use various articulated tandem rollers from the Compact Line for compaction: in addition to the HD 14 VV and the HD 13 VV with two vibration drums each, they also used the HD 12 VO with vibration and oscillation. The rollers stand out due to their compact dimensions and intuitive operation as well as their perfect compaction performance, ensuring that the work was completed on the same evening. “It was impressive to see the different Wirtgen Group machines working together, one after the other, building on each other perfectly. Now we understand the road construction process even better,” explained Linda Menzenbach, an office management trainee at Wirtgen GmbH.

During the workshops, the focus was on Benninghoven, among other things, so that the trainees were able to gain broad insights into asphalt production.

Promoting Team Spirit

On the third day, the trainees from Kleemann showcased their MOBICAT MC 100 Ri mobile jaw crusher for recycling construction materials during a live demonstration – “powerful, efficient, and simply impressive” was the general verdict.

And although not a part of the official agenda, the opportunity to get to know the trainees from the other main facilities and learn about their training, discuss their experiences, and grow into the interdisciplinary collaboration live are all at least as important. Everyone involved has worked hard, gained a lot of hands-on experience, and made new friends.

Boris Becker, head of vocational and advanced training at Wirtgen GmbH, summed up the event: “During these three intensive days, each participant plays an active role and has different responsibilities and jobs to fulfill. The trainees learn from their practical experience; share their knowledge of products, technologies, and processes; and develop not only their own skills, but also the Wirtgen Group’s team spirit.” ■





AID PROJECT IN INDIA

# Giving Children A New Lease on Life

There is no advocacy group for people with disabilities in India. Every day they experience neglect and exclusion. Supported by the "Children in Need" charity group, an aid project is taking care of disabled children on the subcontinent. The goal is to give them an opportunity to take care of themselves as far as possible.



**M**adhya Pradesh is one of the poorest regions in India. According to estimates, almost half of the population there lives below the poverty line. People have to get by on less than 1.25 US dollars (around 1 euro) a day. More than 70 % live in villages and live from agriculture. They are either farmers with tiny plots of land or day laborers. Agricultural wages are extremely low and there is no work outside of the harvest season. Families have little or no access to education or medical care. The situation is particularly dire for low castes and tribespeople (Adivasi).

The percentage of tribal communities in Madhya Pradesh is particularly high compared to the rest of India. They are descendants of the indigenous people. As industrialization progresses, they are being driven off their land, losing their natural livelihood and their cultural identity. Like the Adivasis, the Dalits, as the "Untouchables" are called, are struggling to survive. Among these poorest of the poor, women or families with disabled relatives, for example, have a particularly difficult situation.

There is no advocacy group for people with disabilities in India. They experience neglect, exclusion, and even outright contempt on a daily basis. They live in complete dependence on their families. But even within these families, they are discriminated against when it comes to distributing the daily meals, for example. When a disabled child is born, it is a social, financial, mental, and physical problem for the family.

Anisha is six years old and lives with her parents and two older siblings in the village of Mohanpura. Mohanpura is one of the 190 villages that form the municipality of Sendhwa in the state of Madhya

Pradesh. Her parents live off agriculture. The family income is 2,500 Indian rupees per month, equal to about 30 euros. Anisha was born with limb deformities. It quickly turned out that she also suffered from a mental disability. Due to a lack of knowledge and financial means, the girl never received appropriate support or even encouragement. When Anisha was little, her parents could easily take her with them to their work in the fields. But since she never learned to walk, transporting her became increasingly problematic. Eventually the parents locked her up in the family hut alone during the day.

Like Anisha, most disabled children in the community of Sendhwa are neglected and grow up isolated from society.

### Much Has Already Been Achieved

Sister Julia and her team have dedicated themselves to these forgotten children. Back in 2009, she launched an aid project with ten children, some of whom had multiple disabilities. When we here at "Children in Need" became aware of Sister Julia's work, a total of 20 girls and boys between the ages of 5 and 12 had already found a new home in their "Snehasadan" therapy center. But the sisters' financial means were only enough for the bare necessities. Although they had their own building, they lacked furniture, staff, and even clothing for the children under their care.

The "Children in Need" charity group has now been supporting this aid project for over a year. The situation at the therapy center has improved considerably since then. Approximately 70 children now live in the facility. They were able to purchase bed linens, cooking utensils, and much more. A lot has also improved when it comes to the children's care. It's not just about supervising the little ones anymore. Now the objective is to help the girls and boys become as independent as possible. Little by little, they are learning to dress themselves, wash, go to the bathroom, and eat on their own.

The goal of the project is to give the children the opportunity to take care of themselves as far as possible. A good diet, medical care, and appropriate speech therapy, neurotherapy, and physiotherapy lay the foundation for this.

Today we can already see that the self-esteem and self-confidence of extremely disadvantaged children have grown enormously. The next thing we



Six-year-old Anisha (right) has learned to walk and made friends. Her family is proud of their daughter's progress.

want to do is to expand pre-school and school education. We want the disabled girls and boys to recognize that they also have abilities and help them find out which skills and talents they have hidden inside them. In addition, we want to help them find a way to gain recognition in society. But the parents' involvement also plays an important role in Sister Julia's work. The sisters organize special family counseling camps. Above all, the parents must learn that their children need appreciation, care, and love.

In Anisha's case, the whole family has benefited from our therapy center. By placing the daughter in the facility, her parents are able to carry out their work. And what about Anisha? She learned to walk in Snehasadan and made friends. What is particularly meaningful to her is that her family is proud of their daughter's progress.

We here at "Children in Need" are also very happy to have succeeded in improving the living conditions of disabled children and their families in such a lasting way within a short period of time. ■



Best regards,

*Gisela Wirtgen*

The "Children in Need"  
Charity Group  
Gisela Wirtgen  
(Chairwoman)



THE "CHILDREN IN NEED" INITIATIVE

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Our projects are designed to help over the long term. Every cent brings us one step closer to our goal!

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IBAN: DE16 5706 9238 0100 0527 24  
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### The Organization

was founded in 1983 on the initiative of Gisela Wirtgen, operates on a voluntary and charitable basis for children in need based on the idea of "helping people help themselves," is not affiliated with any political party or religious denomination, and carries out aid projects in the Philippines, India, and Brazil.

### Further Information

> [www.kinder-in-not.de](http://www.kinder-in-not.de)



## SOCIAL COMMITMENT

# Everyone Can Help

The Wirtgen Group and John Deere are highly regarded in the industry for their outstanding customer support. Now both companies are teaming up when it comes to their social activities. The goal: to help the disadvantaged even more effectively.

**G**iving children a new lease on life is her calling. Since founding the “Kinder in Not e.V.” charity group (“Children in Need”) in 1983, Gisela Wirtgen has been tirelessly collecting donations for needy children, young people, and their families, in order to lay the foundation for them to have a better future.

So when Wirtgen Group CEO Domenic Rucolo presented her with a check for 100,000 euros, she was almost speechless. “I am overwhelmed at how the company and its employees continue to support the charity group, even after the acquisition by John Deere,” she said.

The charity group’s approach is to “help people help themselves,” and it is currently funding 47 aid projects in Brazil, India, and the Philippines – and the Wirtgen Group’s employees have been there every step of the way. Whether through active involvement in fundraising campaigns, sponsorships, or financial donations – they stand behind “Children in Need” and Gisela Wirtgen one hundred percent. One reason is because they know that every penny goes where it’s needed and that all of the aid projects are carefully selected and effectively managed by the chairwoman and her team.

## Wirtgen Group Employees Giving Many People New Hope

Mara Sovey Downing, President of the John Deere Foundation, made a special trip to Germany just to attend the event. The US company also supports social projects with its own charitable organization, which is

why they are such fans of the “Children in Need” charity group’s activities. Because of this, Mrs. Downing had not come to Windhagen empty-handed, and with her gift, surprised Gisela Wirtgen for the second time that day. The John Deere Foundation will namely match every donation made by Wirtgen Group employees worldwide to the “Children in Need” charity group, doubling every individual donation of up to 1000 euros. “By combining the financial support of the Wirtgen Group’s employees with that of the John Deere Foundation, we can help the “Children in Need” charity group’s aid projects more effectively together and even extend their reach,” said Mrs. Downing.

“The John Deere Foundation’s offer is a really great idea,” said Gisela Wirtgen, hoping for active participation from the Wirtgen Group’s employees.

In the meantime, she has also decided that she would like to use the Wirtgen Group’s donation of 100,000 euros for an aid project in India that provides care and assistance specifically for disabled children. “The project was launched last year and the money is well spent there. The Wirtgen Group’s employees are once again giving many people new hope,” said the charity group’s chairwoman. ■



Gisela Wirtgen, chairwoman of the “Children in Need” charity group, is visibly moved upon receiving the donation from Domenic Rucolo, CEO of the Wirtgen Group, and Mara Sovey Downing, President of the John Deere Foundation.

## i „KINDER IN NOT“ E.V. - CIVIC INVOLVEMENT

# 47

aid projects are currently being financed by the “Children in Need” charity group (Aktionsgruppe „Kinder in Not“ e.V.), which was founded by Gisela Wirtgen in 1983.

The focus of the initiative’s activities is on educating and providing vocational training to children and young people – because this is the first step towards a self-sufficient life. The charitable organization is active in the following countries:

- The Philippines: Here, the aid projects are located in cemeteries and garbage dumps, in urban slums, and poorly developed rural regions.

- India: In addition to children from the lowest classes, the initiative also supports disabled girls and boys here.
- Brazil: Three day care centers act as a symbol of hope for street children and children from HIV-positive families, among others.

➤ [www.kinder-in-not.de](http://www.kinder-in-not.de)



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