

RoadNews

Cold recycling with the WR 250 from WIRTGEN

**Good news for the environment
and the wallet**

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TOP FEATURE

High-tech in Inner Mongolia: WIRTGEN W 205 large milling machine, VÖGELE SUPER 1800-3 SprayJet paver and HAMM HD O128V



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Editorial

Dear Readers,

Everyday operations in the construction industry are fraught with challenges. Anyone wanting to hold their own in this environment needs to work efficiently, act progressively and think ahead of the game. In these circumstances, it is good to know you have partner who can actively support you with all these objectives.

Recent examples covered in this edition of RoadNews demonstrate once again how faithfully we deliver on this big promise. Especially the Top Feature, which reports on a contractor from Inner Mongolia who has invested in top technology from WIRTGEN, VÖGELE and HAMM and is now operating very successfully with this equipment on the market. The same is true of a Shandong-based road construction company featured in this edition, which relies on VÖGELE SUPER 1880-3 L and SUPER 800 pavers.

The cold recycling method delivers a combination of efficiency and environmental compatibility. After all, as much as 100% of the existing construction material is

processed. A WIRTGEN WR 250 cold recycler excelled on a structural rehabilitation job like this in the province of Shanxi. Meanwhile, MOBIREX crushing plants from KLEEMANN will be ensuring even more eco-friendly operation from now on with optional packages for reducing noise and dust. New technological developments are afoot at HAMM: the new HP series pneumatic-tyre rollers are getting off to a flying start in China.

We hope you enjoy this fifth edition of RoadNews!

Best wishes,



Ulrich Reichert

CEO and Managing Director
WIRTGEN (CHINA) Machinery Co., Ltd.



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High-tech in Inner Mongolia: state-of-the-art machine and application technology from the WIRTGEN GROUP - including a WIRTGEN W 205 large milling machine (shown here), a VÖGELE SUPER 1800-3 SprayJet spray paver and a HAMM HD O128V tandem roller - is used to replace the asphalt surfacing in record time on a section of the Qinghe North Road in Chifeng.



Inner Mongolia Autonomous Region | Hohhot | **Chifeng**



Innovative machines from the
WIRTGEN GROUP in Inner Mongolia:

Top technologies for Chifeng





With WIRTGEN GROUP technologies, we deliver top quality.

Wang Zhenli, Jobsite Manager
Chifeng Chengda Municipal
Engineering Construction Co., Ltd.

W 205 large milling machine prepares a perfect base

The W 205, with its 455kW of power, got to work on the 3.5m-wide road surface, which was marred by cracks and wheel ruts primarily caused by heavy goods traffic. The front loader was equipped with a fine milling drum to remove the 2cm-thick surface course.

Chifeng Chengda Municipal Engineering Construction Co., Ltd. opted for an LA6 fine milling drum with two cutting tools per cutter row for this project. In contrast to a standard milling drum, it has 672 cutting tools instead of the customary 168.

The 6mm tool spacing creates a very finely structured road surface with a low peak-to-valley depth that ensures optimum interlocking of the milled surface with the newly paved asphalt layer.

Though the W 205 large milling machine was only able to showcase a fraction of its performance potential on its debut assignment, the team was thrilled – much to the satisfaction of the WIRTGEN GROUP service technicians in China, who were available to the team for questions and assistance along the first few metres of the job.



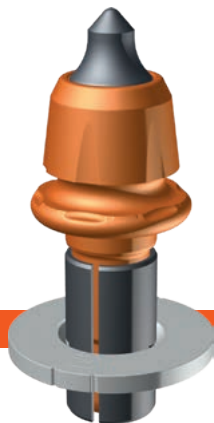
W 205 large milling machine and GENERATION A point-attack cutting tools: powerful, tailor-made for China

The fine milling drum on the W 205 large milling machine was equipped with GENERATION A point-attack cutting tools, engineered by WIRTGEN specifically to suit the demands of the Asian market. The cutting tools were of the type W5-G/20A. As with all other GENERATION A cutting tools, their advantages include the long service life of both the cutting tools themselves and the toolholders. This enables companies to increase the availability of their machines and complete projects much more cost-efficiently.

Optimum preparation for paving thin overlay

This was confirmed again by the work on the Qinghe North Road, where the W 205 large milling machine quickly removed the pavement and produced a milled surface with the specified surface accuracy, creating ideal conditions for the SUPER 1800-3 SprayJet paver to pave the new thin asphalt overlay. The quality of the milled surface has a considerable influence on the quality of the new surface course, its service properties and the cost-efficient implementation of subsequent operations.

Cost-efficient
cutting tools:
GENERATION A
point-attack
cutting tools.



Milling results that are true to
cross-section, line and level help
to avoid costly corrective measures
involving the subsequent paving
of regulating asphalt layers.





W 205: Designed for maximum performance

- > The two-metre cold milling machine is impressive with its high milling performance and professional ancillary equipment
- > The professional machine caters to a wide range of applications, from surface course rehabilitation all the way to full pavement removal
- > The innovative FCS Light enables the use of different milling drums to increase flexibility and machine utilization
- > High traction is ensured by exceptionally robust track units fitted with large track pads
- > The new Delta 18 milling drum technology and three adjustable milling drum speeds deliver high performance at low operating cost



The **W 205** is more powerful than any cold milling machine I've ever seen.

Zhao Weili, Milling Machine Operator
Chifeng Chengda Municipal
Engineering Construction Co., Ltd.





WIRTGEN

1

Highlight
Delta 18 milling drum technology
significantly cuts costs

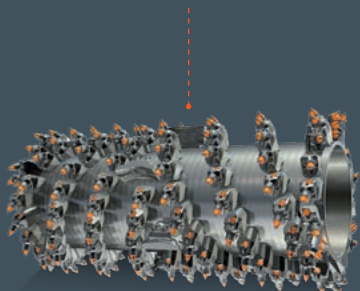
The newly developed Delta 18 milling drum technology, with optimized arrangement of the cutting tools and three selectable milling drum speeds, gives users not one, but two advantages: a significant increase in milling performance at working widths of 2,000mm and working depths down to 330mm, plus a simultaneous reduction in tool wear.

2

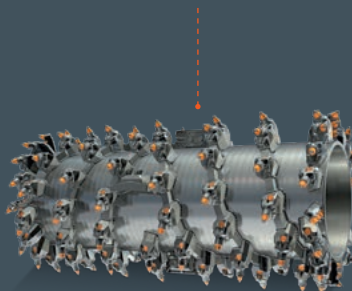
Highlight
FCS Light for a wide range
of applications

With FCS Light, milling drums with different tool spacings can be switched in next to no time, making it possible to handle a variety of milling jobs, from surface course rehabilitation to complete pavement removal, all with one machine. This feature increases utilization of the W 205 and therefore its overall cost-efficiency.

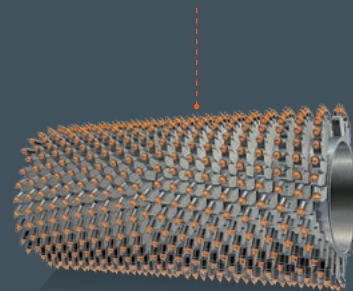
LA18 standard milling drum



LA25 ECO cutter



LA6x2 fine milling drum



The highly effective WIRTGEN milling drums deliver an excellent milling performance.

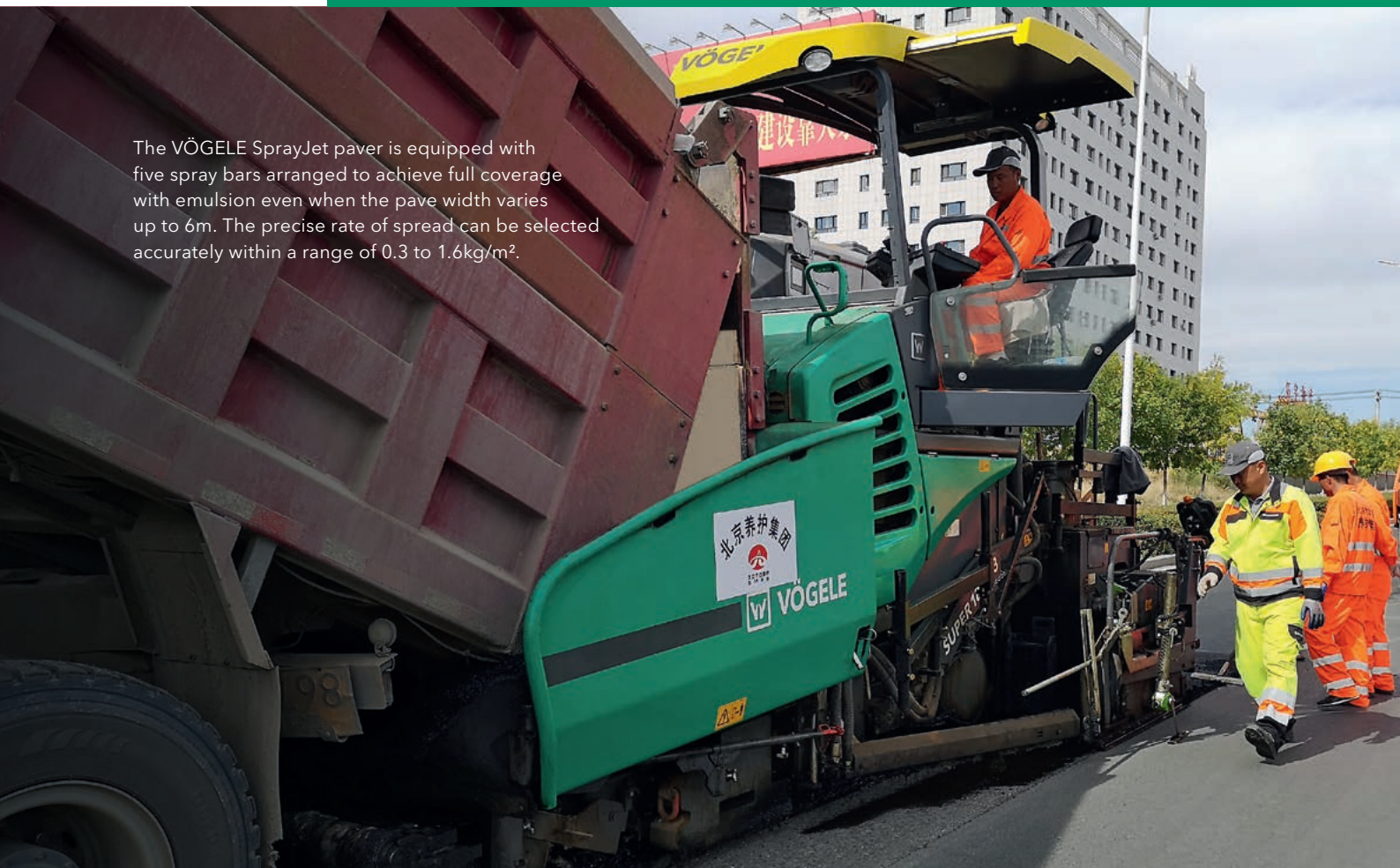
W 205

SUPER 1800-3 SprayJet paver: a true multi-talent for maximum versatility

When it comes to top technologies from the WIRTGEN GROUP, Chifeng Chengda Municipal Engineering Construction Co., Ltd. has more to offer than just the W 205 large milling machine. Its fleet of machines also includes a spray paver from VÖGELE, because the durability of rehabilitated asphalt roads critically depends on the bond between layers. The SUPER 1800-3 SprayJet, which can also operate as a standard paver, represents the state of the art in this discipline. The process involves pre-spraying bitumen emulsion and paving asphalt in a single pass. Spraying jobs of this kind have been establishing an excellent track record for many years worldwide, even in Inner Mongolia.

At the job site in Chifeng, the SUPER 1800-3 SprayJet, equipped with an AB 600 Extending Screed, paved thin overlay on spray seal, "hot on hot". This method is a low-cost alternative to conventional paving, because the surface course is only 1.2-2cm thick.

The VÖGELE SprayJet paver is equipped with five spray bars arranged to achieve full coverage with emulsion even when the pave width varies up to 6m. The precise rate of spread can be selected accurately within a range of 0.3 to 1.6kg/m².



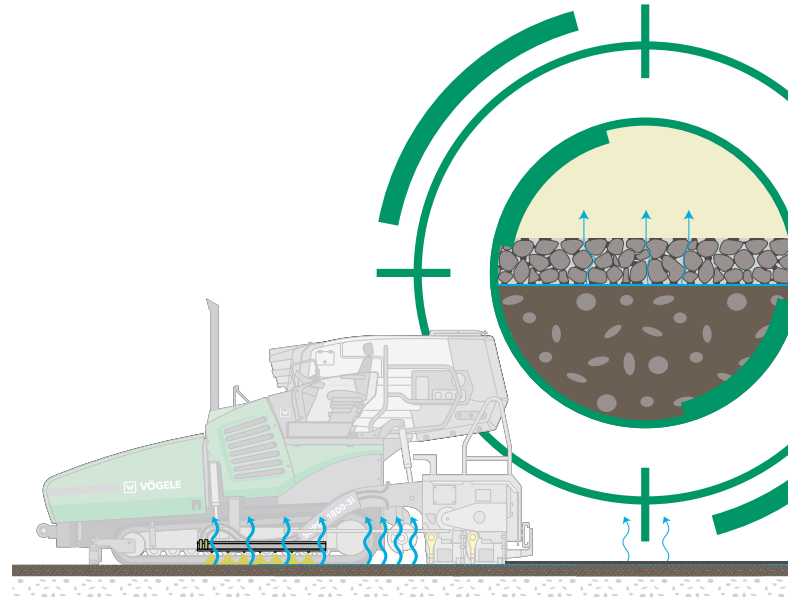
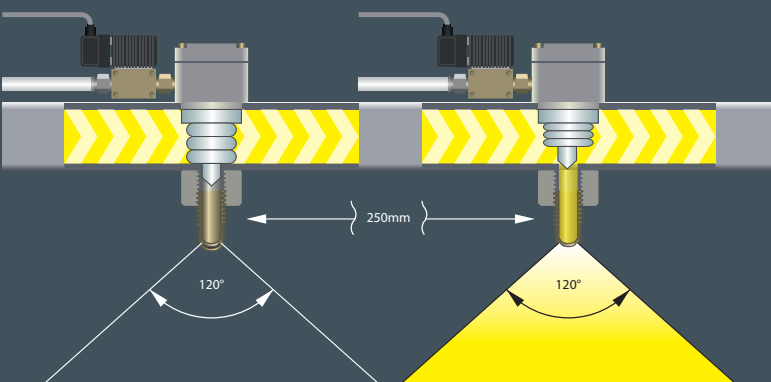


High versatility

"With our SUPER 1800-3 SprayJet, we're prepared for jobs of all kinds. We can pave binder and surface courses right on the pre-sprayed bitumen emulsion or work the conventional way," reports Wang Zhenli, job site manager of Chifeng Chengda Municipal Engineering Construction Co., Ltd. "And in terms of handling, the spray paver is just as easy to use as other SUPER pavers." The only difference is that the SprayJet module, with its 2,100-litre tank (and a total capacity of 7,100 litres with the optional extra tank), is mounted on the right side of the machine. Operation of the SprayJet module has largely been integrated into the ErgoPlus 3 operating system.

VÖGELE spray technology: low pressure, perfect spray pattern

The premium craftsmanship of the spray nozzles and the very low spray pressure of max. 3 bar guarantee an excellent spray pattern and a clean job. The nozzles do not spray continuously, but in a pulsed mode that adapts automatically to the specified rate of spread, pave speed and pave width.



High quality for a perfect bond between layers: the result of "breaking" the bitumen emulsion

By the time the bitumen emulsion, pre-heated to between 70 and 80°C, is sprayed onto the prepared milled surface, most of the water in the emulsion has already evaporated. The rest of the water evaporates when the emulsion comes into contact with the hot mix, which is over 100°C. This is the process of "breaking" the emulsion when using VÖGELE SprayJet technology.

- 1 | The prepared base is either a milled surface or a freshly laid binder course.
- 2 | Hot bitumen emulsion at a temperature between 70 and 80°C is applied by the spray paver.
- 3 | Paving of a binder or surface course starts. The bitumen emulsion immediately "breaks", because the hot asphalt mix evaporates any remaining water. What is left behind is a firmly bonded film of bitumen.
- 4 | The water vapour released after contact with the hot asphalt mix escapes through the open pores in the asphalt layer.



HD O128V tandem roller: fast, high-quality compaction with vibration and oscillation

Proven solution for compaction in earthworks and asphalt paving applications: HAMM has been pioneering oscillation technology for over 35 years and has now integrated it into over 35 of its models.

Chifeng Chengda Municipal Engineering Construction Co., Ltd. likewise relies on leading technology for compaction. Its fleet further includes, for example, an HD O128V with 1.98m-wide oscillation and vibrating drums. With this feature, the HAMM tandem roller, with a weight ranging from 12.3t to 13.5t depending on the version, can meet a wide variety of requirements, achieve extremely high-quality compaction results and promote fast progress on a job.



With its wide drum width of almost 2m and weight of over 12t, the HD O128V is ready to take on big jobs.



HD series 3-point articulation technology ensures positive tracking when moving straight, high stability when cornering and maximum driving comfort.

3-point articulation - precise steering, safe travel

The 3-point articulation technology in HD series tandem rollers offers operators unusually good driving stability and steering characteristics, ensuring unsurpassed directional stability and outstanding driving comfort.

Even at the maximum steering angle, 3-point articulation ensures an even distribution of weight over the front and rear frames of the machine. This results in very even asphalt surfaces, because from the outset it avoids asphalt displacement and deformations.

In addition, 3-point articulation reduces the risk of the machine tipping over in tight bends.

Oscillation - the faster way to compact

The HAMM 12t HD O128V roller is equipped with one oscillation drum and one vibrating drum. With oscillation technology, compaction increases particularly quickly because the oscillation drum directs tangential shear forces into the surface, while remaining in constant contact with the ground. The combination of a continuously acting static load and changing dynamic shear forces results in faster, better and gentler compaction.

Moreover, amplitude and thus compaction power are automatically adapted to the surface's current degree of rigidity. Rather than using electronics, HAMM achieves this effect by intelligently applying the laws of physics.

Cold recycling with foamed bitumen and pre-spread cement:

WR 250 delves deep on a damaged road



Shanxi | Jinzhong



To ensure that the regional road infrastructure remains fully functional over the long term, the contracting authority in the province of Shanxi decided on structural rehabilitation of the 102 Provincial Road - and the contractor opted for a WR 250. A diesel engine rated at 571kW drives the WR 250 to optimum performance.

777HP

or 571kW drive the WR 250
to optimum performance.



We are recycling 100% of the RAP, minimizing the environmental impact and saving money. This technology helps China get ahead.

Xu Xinsheng, Project Manager
Shanxi Jinlu Highway Engineering Co., Ltd.

Structural rehabilitation with the WR 250

Road rehabilitation projects have to meet the same requirements all over the world: they must be cost-effective, eco-friendly, and above all, finished quickly. After all, the global road network is showing visible signs of ageing. Patchwork repairs are neither sustainable nor do they address the root cause. The cold recycling process is already popular today, and demand for this solution is set to grow in the future, given that it entails shorter construction periods than most alternative methods of rehabilitation. This method also proved to be the optimum solution on the Yushe section of the road. Extending over 10km, this 9.3m-wide stretch is trafficked by some 6,000 vehicles a day. The contractor, Shanxi Jinlu Highway Engineering Co., Ltd. deployed two wheeled WR 250 cold recyclers and soil stabilizers from WIRTGEN for recycling in place.

Efficient rehabilitation

The 777HP powerhouses transform damaged asphalt courses into high-grade base courses in a single pass, regardless of the job site size and working depth. Cement, water, bitumen emulsion and foamed bitumen can be used as additives or binding agents. To achieve high-quality mixing results, the binding agents must be injected precisely throughout the entire working process. WIRTGEN's solution: robust, microprocessor-controlled injection systems ensure that the additives are carefully regulated. Several injection bars can be installed to suit the job, while a variety of binding agents can be added. For Xu Xinsheng, this was one of two key factors that prompted him to choose this machine model: "WR 250 machines are impressively efficient and ensure high spraying accuracy and mixing quality," the project manager explains.





The experts talking shop: Xu Xinsheng, project manager of Shanxi Jinlu Highway Engineering Co., Ltd. conferring with an applications expert from the WIRTGEN GROUP in China.

Cold recycling layer with high durability

The parties responsible for the project opted to use foamed bitumen, a binding agent whose advantages also came into play when rehabilitating the 102 Provincial Road: efficiency, conservation of resources and extreme durability of the recycled layers.

Material structure

Cold mixes produced with foamed bitumen behave in a similar way to construction materials with constant inter-particle friction but exhibit significantly higher cohesion (adhesion force) and strength.

This type of material is also called BSM (bitumen-stabilized material). The aggregate is not coated in BSM mixes. Instead, the bitumen binder is homogeneously admixed. Typical bitumen quantities range between 1.5% by mass and 2.5% by mass of the mixed material.

After final compaction, the construction material delivers excellent flexibility and a high bearing capacity. It has a proven track record around the globe.

High mixing quality

Along with the injection bar, the powerful DURA FORCE milling and mixing rotor had a key impact on the mixing quality praised by Project Manager Xu.

The optimum interplay of rotor, holder base, quick-change toolholder system and point-attack cutting tools enables it to maintain a consistently powerful milling and mixing performance. This helps to create a very homogeneous new construction material mix that, following compaction by HAMM rollers, delivered the perfect foundation for the final asphalt surface in Yushe.



Crushed-stone material,
mixed with water
for optimum compaction

Bitumen-stabilized material
with foamed bitumen,
mixed with water for
optimum compaction



One series, two applications

Machines in the WR series – which, along with the WR 250, also includes the WR 200 and the WR 240 – are full liners, which means that they are specialists not only in cold recycling, but also in soil stabilization. This is proving to be the optimum solution whenever the properties of soil have to be altered to make it suitable for further roadworks.

Soil stabilization is the method of choice when it comes to ensuring the load-bearing capacity and quality of soil in preparation for road construction projects. The targeted addition of stabilizing agents can, for instance, help to reduce the moisture content of soil, which is vital for further roadworks. Compared to the process of exchanging the entire soil, soil stabilization is an economical and resource-saving method. Cost savings result from the simpler job site logistics, for instance, with fewer lorry trips and shorter construction periods. Resources are also conserved, since all of the existing soil is used in the stabilization process with only stabilizing agents such as lime or cement being added – or a combination of both in the form of a mixed stabilizing agent.

Highlights WIRTGEN WR 250

- > The most powerful recycler in the WR series is particularly suitable for demanding operations.
- > With a working width of 2.4m and a maximum working depth of 560mm, the WR 250 is a high performance machine for particularly challenging projects.
- > Thanks to its high milling and mixing performance, the recycler can tackle the most challenging of operations in soil stabilizing and cold recycling.
- > The ideal performance range for soil stabilization applications is at outputs of 6,000 to 12,000m² a day.
- > The ideal performance range for cold recycling applications is at outputs of 700 to 1,200m² per hour and asphalt thicknesses of 20 to 25cm.

Water

Aggregate

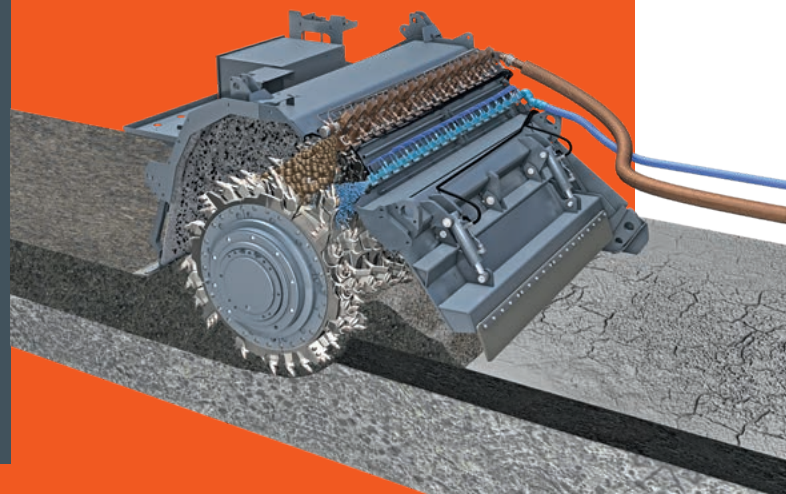
Air

Bitumen

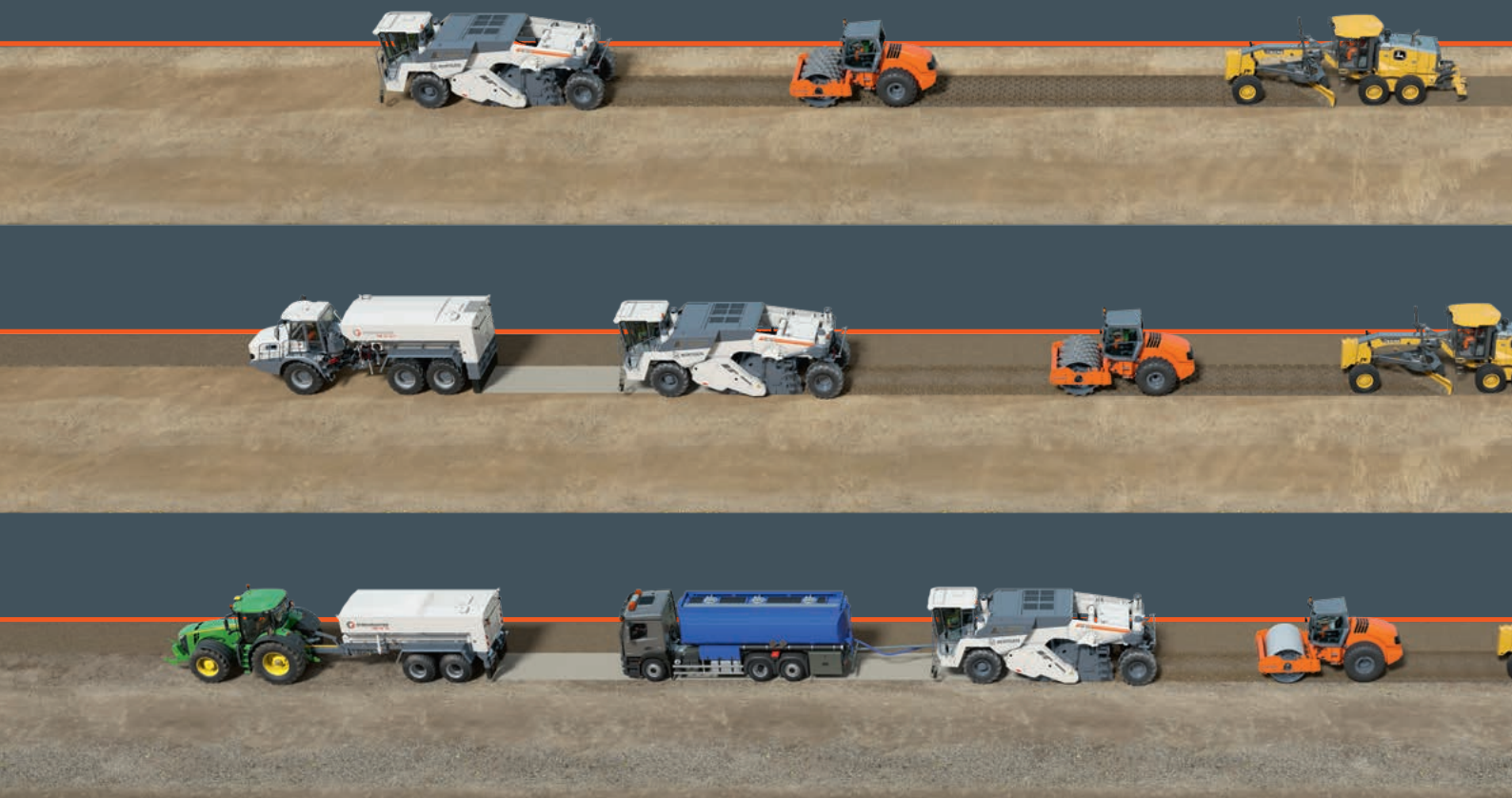
Aggregate

Water

The microprocessor-controlled injection bar injects foamed bitumen into the mixing chamber in precisely metered quantities.



WIRTGEN technology for soil stabilization: versatility is key



1

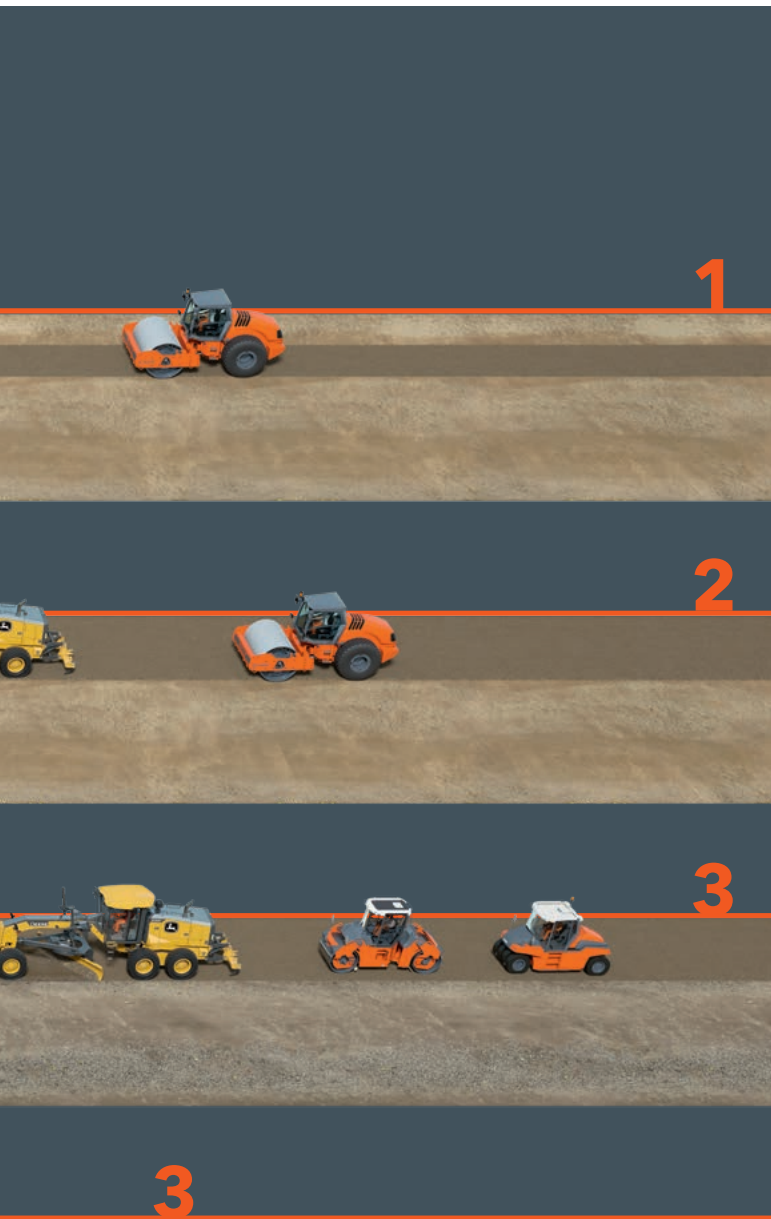
Homogenization

In the homogenization process, the powerful milling and mixing rotor of the WIRTGEN soil stabilizer granulates the native soil without the addition of stabilizing agents and loosens it. While a grader profiles the homogeneous soil prepared in this way, rollers for soil compaction take care of the compaction process.

2

Soil improvement with lime

A machine train is generally required if the properties of the soil are to be permanently improved. This begins with a binding agent spreader which deposits the stabilizing agent evenly, followed by a WIRTGEN soil stabilizer. The WR 250 uses its milling and mixing rotor to mix the soil homogeneously with the pre-spread lime. A pressurized scraper on the rear milling drum flap ensures that the treated material is smoothed evenly. While a grader profiles the soil mixture, rollers for soil compaction ensure optimum compaction.



Soil stabilization with cement

Stabilization with cement creates water-bound base courses. The binding agent is laid by a towed spreader, which is followed by a water tanker. Behind it, the milling and mixing rotor of the WIRTGEN soil stabilizer mixes the soil with the pre-spread cement to form a homogeneous mass. At the same time, water is sprayed into the mixing chamber by means of an injection bar. Here, too, graders profile the treated material and rollers complete the job by ensuring optimum compaction.

Many invitations to tender continue to specify that the soil is to be exchanged – but this is no longer a state-of-the-art method. The WIRTGEN soil stabilizer uses its powerful milling and mixing rotor to mix pre-spread stabilizing agents such as lime or cement into existing soil with insufficient bearing capacity, transforming it into a high-grade building material right on the spot.

The homogeneous mixture of soil and stabilizing agent that is produced delivers a high load-bearing capacity as well as lasting resistance to water and frost, and volume stability. Typical applications include the construction of paths, roads, motorways, routes, parks and sports grounds, industrial estates, industrial plants, airfields, dams, backfilling and landfills.

Different applications: stabilizing soil, improving soil

Soil treatment is a generic term for processes in which soils are modified to meet certain specified properties. A distinction is made between soil stabilization and soil improvement.

Soil stabilization comprises a range of processes in which binders are added to the existing soil to increase its resistance to stresses caused by traffic loads and climate, ensuring lasting bearing capacity and frost resistance.

Soil improvement comprises a range of processes which improve both the paving properties and compactability of existing soils and facilitate the execution of construction work.

Perfect stabilization: the powerful DURAFORCE milling and mixing rotor of the WR 250 blends the pre-spread binder into a homogenous soil and stabilizing agent mix.



Chinese contractor "hits the road running"

Shandong Hongyu Construction Engineering Co., Ltd.
is revving up with machines from VÖGELE and HAMM.



Shandong | Dongying



We are highly satisfied with our new machines and the service we get. This has fully confirmed our faith in the WIRTGEN GROUP's excellent reputation.

Li Limin, General Manager
Shandong Hongyu Construction Engineering Co., Ltd.

At the leading edge with WIRTGEN GROUP technologies

A company which only started paving asphalt in 2017, the continual support of a premium partner and a fleet of construction machinery which makes all the difference: this is the formula for the success enjoyed by Shandong Hongyu Construction Engineering Co., Ltd. "We first started manufacturing and distributing asphalt back in 2000. I was very taken with the idea that we could build and rehabilitate roads ourselves," says Li Limin, general manager of Shandong Hongyu Construction Engineering Co., Ltd. "When selecting our machine technology, we opted for premium products from the WIRTGEN GROUP, swayed by the many recommendations we encountered."

This led Li Limin's company to invest in 5 VÖGELE pavers and 6 HAMM tandem rollers, forming highly motivated paving teams to operate them. "With our fleet, we can take the market in Shandong province by storm," Li says. Two job reports on the following pages provide all the specifics on how machines are being used.

1880-3 L

SUPER 1880-3 L takes on a new urban district

Although the job site worked by Shandong Hongyu Construction Engineering Co., Ltd. only required "routine" work from the Universal Class paver, it still showcased the machine's capabilities: the tracked paver laid a 0.5km-long street for a new urban district in Dongying, a city with a population of two million. Even on relatively small construction projects like this one, clients still demand the very best quality, with the result that these jobs need to be planned and executed every bit as meticulously as large-scale projects. The SUPER 1880-3 L and the AB 600 TV Extending Screed make the ideal combination for such jobs, paving asphalt to a high quality, right from the very first metre.

In Dongying, it was the great flexibility of the AB 600 TV Extending Screed that proved the greatest asset: featuring a sturdy telescoping tube, it can double its basic width from 3 to 6m, reaching the required pave width of 6m without the need for bolt-on extensions.

Virtually no task too small, no challenge too great

The all-rounders in VÖGELE's paver line-up – particularly the SUPER 1880-3 L (Premium Line) and the SUPER 1880 L (Classic Line) – need to cover a wide array of applications, starting with the construction of small roundabouts and extending to large motorway job sites, where high performance is what counts.


A glance at the performance figures bears this out: the maximum possible pave width is 10m, though the tractor unit is less than 6m long. The required energy is supplied by a powerful yet fuel-efficient diesel engine delivering 158kW.

ErgoPlus 3 also plays a key role in ensuring that paver operation is as efficient as it is ergonomic. The innovative, easy-to-understand ErgoPlus 3 operating concept creates a work environment with all the ergonomic and practical advantages a machine operator could possibly want – as the paving team from Shandong Hongyu Construction Engineering Co., Ltd. discovered.





A machine which hits the mark with universal application options: the SUPER 1880-3 L, which VÖGELE has tailored to the requirements of the Chinese market.

A man wearing an orange long-sleeved shirt and a red baseball cap is smiling while operating a piece of machinery. His hands are on a control panel with various buttons and a joystick. The background shows an outdoor construction or maintenance site with trees and a building.

Highlights of the VÖGELE Universal Class SUPER 1880-3 L paver

- > Maximum pave width 10m
- > Laydown rate up to 1,000t/h
- > Maximum layer thickness 50cm
- > Robust and high-quality design
- > Powerful diesel engine rated at 158kW
- > VÖGELE EcoPlus low-emissions package
- > ErgoPlus 3, the ultimate paver operating concept
- > The right screed for every application:
AB 600 Extending Screed,
SB 300 Fixed-Width Screed and
SB 300 HDT Fixed-Width Screed for
roadbase applications



Our SUPER 1880-3 L has clocked up 1,600 operating hours without a single failure. That's pretty phenomenal!

Han Debao, Paver Operator

Shandong Hongyu Construction Engineering Co., Ltd.

Making cost efficiency fun

Han Debao, paver operator at Shandong Hongyu Construction Engineering Co., Ltd., looks back on his seven years of experience with SUPER pavers, including the SUPER 2100-2, SUPER 2100-3 L and SUPER 800 models.

"The machines are easy to operate. Once you've understood ErgoBasic and ErgoPlus 3, you can operate any VÖGELE paver. That's a very important advantage." What also greatly impresses Han is the sophisticated product quality of his SUPER paver: "I simply can't knock it. What I like so much about VÖGELE is how they think about the everyday life of the users."

Machines and service meet expectations

And that's true not just of the VÖGELE machines, but also of the products from the entire WIRTGEN GROUP. Shandong Hongyu Construction Engineering Co., Ltd. is also thrilled with its HAMM rollers. "The HD and HD CompactLine series, of which we have a total of 6 tandem rollers in use, offers a winning combination of performance, efficiency and productivity - exactly what you would want as a construction machinery fleet manager," said Sun Yuanlin, deputy general manager for road construction equipment. "And the quality is first class, of course, as is the service provided by the WIRTGEN GROUP in China."

So it stands to reason that Shandong Hongyu Construction Engineering Co., Ltd. is planning to acquire additional machines from the broad portfolio of the WIRTGEN GROUP.

Highlights of the Big MultiPlex Ski

- > Fast and easy installation
- > High degree of evenness
- > Large measuring range of up to 13m, which allows levelling of extended irregularities
- > Flexible application
- > Calculation of an average based on at least three and up to five multi-cell sonic sensors
- > The values recorded are processed directly by the ErgoPlus 3 screed console or the ErgoBasic remote control unit for the screed (no separate hardware required)



Big MultiPlex Ski - "A real advance"

In Dongying, the paving team not only worked with the very latest machine technology, but also deployed innovative grade and slope control technology: the Big MultiPlex Ski, a system that uses three multi-cell sonic sensors to level even extended irregularities. This sensor system, combined with VÖGELE's system for grade and slope control, has raised the bar once more. This is all thanks to the plug & play principle: once the aluminium ski has been mounted on the

paver, the three sensors have been fitted on the ski and the cables have been connected, the system for automated grade and slope control independently detects the connected sensors - and is started up at the press of a button.



The Big MultiPlex Ski greatly simplifies our work. The system for automated grade and slope control takes care of the installation almost single-handedly. That makes things so much easier for us.

**Sun Yuanlin, Deputy General Manager for
Road Construction Equipment
Shandong Hongyu Construction Engineering Co., Ltd.**

Up and running faster, easier to operate and unfailingly precise: the Big MultiPlex Ski from VÖGELE truly pays off – especially when speed and quality are of the essence.

Precision grade and slope control boosts cost-efficiency

Mastery of this art is guaranteed by VÖGELE's systems for automated grade and slope control, be it the Niveltronic Plus system installed in Premium Line pavers such as the SUPER 1880-3 L or the Niveltronic Basic system installed in VÖGELE Classic Line pavers such as the SUPER 1880 L. Grade and slope control is, after all, a vital aspect, especially considering its impact on the cost-efficiency of construction projects. It ensures that the specified grade and slope are precisely

met. This is where every surplus millimetre paved sends costs soaring, especially on large construction projects. When combined with the Big MultiPlex Ski, the VÖGELE systems for automated grade and slope control ensure maximum precision and – equally importantly – absolute operating safety.



**I am overjoyed that we
are working with
VÖGELE machines. They just
do their job so reliably.**

**Sun Yuanlin, Deputy General Manager for Road Construction Equipment
Shandong Hongyu Construction Engineering Co., Ltd.**

100% reliable technology

"I am overjoyed that we are working with VÖGELE and HAMM machines. Whenever the job site or the material is a little out of the ordinary that's when you need to be able to rely on your technology," explains Sun Yuanlin, deputy general manager for road construction equipment at Shandong Hongyu Construction Engineering Co., Ltd. "In those cases, the machines simply have to play their part and deliver the goods if the quality of the result is to be up to scratch. And the premium products fit the bill in this respect. Thanks to this and the partnership-based service offered by the WIRTGEN GROUP in China, we are seeing our decision vindicated time and again," Sun continues.





SUPER 800 Mini Class paver adds a dash of colour

Special colourless bitumen, colour pigments and a selected mineral aggregate – these are the ingredients for a unique kind of road surface: coloured asphalt. Along with the special material, a tried-and-tested road paver was also used on section #4 of the West No. 1 Road job site: a SUPER 800 from VÖGELE. This Mini Class paver truly excels on jobs involving the construction and repair of farm tracks, minor roads, footpaths and cycle paths.

When also used to pave coloured asphalt, the modern tracked paver showcases its skills as a landscape architect: apart from its striking appearance, with many different shades to choose from, coloured asphalt also offers key advantages over the coloured coatings which are sometimes employed – for instance, instead of becoming slippery, it retains its grip even when wet, thus enhancing safety.

High-end material that is easy to handle

Since contracts involving coloured asphalt are relatively few and far between, many contractors are naturally wary of processing the material. Of course a number of details must be kept in mind when producing the asphalt, particularly concerning the careful selection and coordination of the materials, but once on the job site the process itself is conventional: mix lorries deliver the material right into the material hopper of the SUPER 800.

The large material hopper with separately folding sides is designed so that the machine can always be supplied with paving material in the best, most cost-effective way. This allows material to be fed even if the feed vehicle is unable to dock centrally in front of the machine, such as when paving along walls, for instance.

SUPER

- > The SUPER 800 is a member of the Classic Line. VÖGELE pavers of the "Dash 3" Generation such as the SUPER 1880-3 L are included in the Premium Line. The key difference is the operating system: Classic Line pavers are controlled with ErgoBasic, Premium Line pavers with ErgoPlus 3.



A paver which makes optimum use of any space: where spatial conditions permit, the SUPER 800 can be supplied with mix conventionally by lorry. And if things get tight, the Mini Class machine can squeeze through narrow gaps with its clearance width of just 1.4m.

Clean machines and precisely planned logistics are key

There is a very important difference when paving coloured asphalt, however: the asphalt mixing plant, the feed lorry and of course the construction machinery used must be cleaned thoroughly beforehand so that the coloured asphalt is not contaminated.

"We won this contract in a bidding process. The fact that our company produces, delivers and paves the asphalt itself meant that we were able to prepare the entire supply chain perfectly for the red material," said Li Limin. "Aside from the fact that it cools a little quicker than conventional mixes, it behaves normally," Li added.

To ensure that the material always arrived on the job site quickly, Shandong Hongyu Construction Engineering Co., Ltd. made sure it had enough lorries from its fleet in operation at all times.

Leading technology from VÖGELE delivers quality

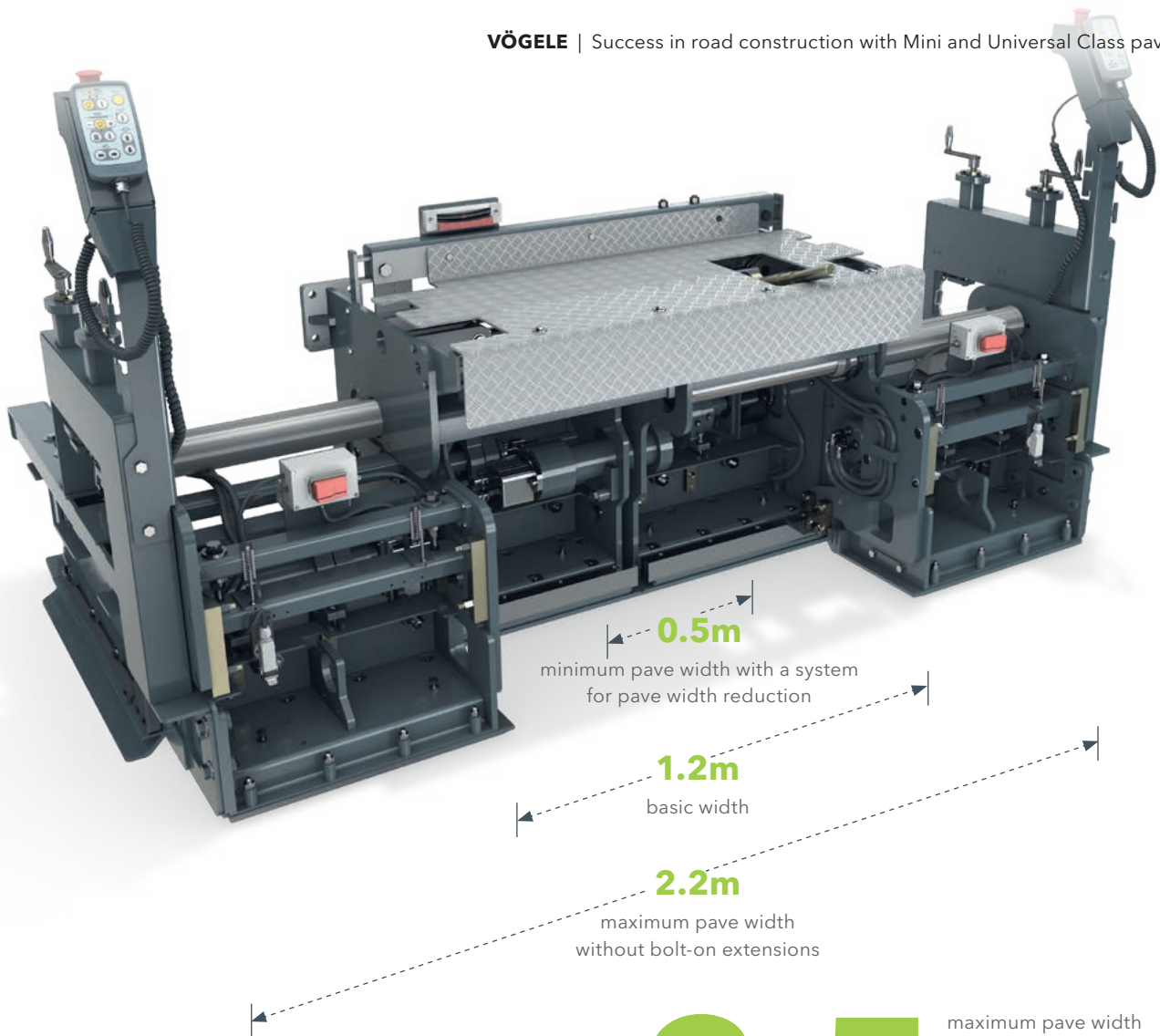
Conditions on the West No. 1 Road job site corresponded to the typical applications of the SUPER 800: paving was performed using the standard AB 220 TV Extending Screed developed for this paver at a width of 2.85m.

Just as one would expect of VÖGELE equipment, even the Mini Class pavers are configured to deliver this excellent performance. The maximum pave width of the AB 220 TV Extending Screed with bolt-on extensions is an impressive 3.5m and – as the TV suffix indicates – even the smallest VÖGELE screed compacts the asphalt by tamper (T). Compaction by vibrators (V) is also possible to improve the surface where necessary. This creates the ideal conditions for delivering high quality even when building small roads and paths.

SUPER 800

High product quality ensured an impressive pavement quality: even the VÖGELE Mini Class pavers achieved perfect evenness. Final compaction was performed by a HAMM HD CompactLine HD 10C VV tandem roller with two vibrating roller drums.





Large range of applications:
VÖGELE AB 220 TV Extending Screed

3.5m maximum pave width
with bolt-on extensions
(2 x 0.65m)

Highlights of the VÖGELE Mini Class SUPER 800 paver

- > Laydown rate up to 300t/h
- > Clearance width only 1.4m
- > The ideal option for highly confined sites thanks to its compact dimensions
- > Wide range of pave widths from 0.5–3.5m
- > Simple operation with the innovative and easy-to-grasp ErgoBasic operating concept
- > High precompaction with the AB 220 TV Extending Screed (tamper and vibrators)
- > Several feed options with the asymmetrical material hopper
- > Positive tracking and precise steering due to traction drives in closed loops
- > Powerful and cost-efficient thanks to the 54kW diesel engine and ECO mode



Small machine, big achievement

HAMM HD 30 VV - A stellar machine
helps to construct a beautiful country road

The HD 30 VV is one of 6 models in the HD CompactLine series launched on the Chinese market in 2018. These rollers, manufactured in the WIRTGEN GROUP's local production facility in Langfang, have been tailored in every detail to meet the needs of Chinese customers and users. One of the new machines works in Jiangsu Province, where a 1.5km local road was rehabilitated in just two days in November 2018.



Jiangsu | Nanjing



Job site details

Paving of a new surface course on a country road in the Zutang Section of Nanjing, Jiangsu

Working parameters

Width	4m
Thickness	4-5cm (after compaction)
Compaction method	vibration

Material

Surface course	AC 13
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Equipment

VÖGELE SUPER 1900-3 L paver with AB 600 TV Extending Screed

HAMM HD 30 VV tandem roller

HAMM HD CompactLine tandem roller:
the HD 30 VV responds flexibly to narrow
and winding rural roads.



Road rehabilitation in natural surroundings

Moling Sub-district is located at the centre of Nanjing Municipal, the main residential area of Jiangning District, in attractive natural surroundings. One of the local country roads was damaged and was impeding daily traffic for the local residents. On top of this, the damaged road was marring the beautiful surroundings. So, the local government decided to allocate funds for road rehabilitation.

High demands on quality

On inspecting the site, the contractor for the project, Nanjing Tongli Construction Group Co., Ltd. (known as "Tongli Construction"), identified two challenges of this project. One crucial aspect was the working speed, as this road is the only way for local residents to travel to and from their homes. The road consequently had to be rehabilitated in the shortest possible time.

Another challenge was the confined space and the fact that the 1.5km road section was very winding and the houses were built close to the road. Achieving a good compaction result across the entire width of the



Strong focus on the needs of the user: the 3-point articulated structure ensures excellent directional stability and turning stability. The wasp waist gives the operator a clear view of the drum edge and the machine's immediate surroundings.

pavement including the road edges was crucial to the quality of the rehabilitation work.

HAMM HD CompactLine is the machine of choice

In the past, Tongli Construction used auxiliary equipment such as vibratory plates to compact asphalt on small job sites like this. But the results are difficult to control when compacting with vibratory plates, and this can affect the service life of the road after rehabilitation. Furthermore, this type of compaction is time consuming, making it an uneconomical method with labour costs on the rise. Tongli Construction

therefore decided to buy a tandem roller for effective, high-grade and economical compaction. After researching their options, the company selected the HAMM HD 30 VV with a maximum operating weight of 3.2t and a 1m drum width, convinced by its superior compaction power compared with other models in the same class.



HAMM

HD
30 VV

The large drum diameters of HD CompactLine rollers help to prevent the formation of bumps or undulations and ensure high compaction quality.



High degree of flexibility is ideal for tight spaces

HAMM rollers are not only known for their compaction power, but also for their intelligent design. The agile orange HD 30 VV also hit the mark with its wasp waist, which offers perfect visibility to operators. They can see the drum edges and have a good overview of the job site as well as the areas to the front, rear and either side of the machine. Meanwhile, the ergonomic operator's platform with its modern display allows the operator to control the machine easily. Even on the narrowest section of the road, which measured just 4m across, the operator compacted the surface efficiently at a speed of 0.18km/h. It took less than five hours for the operator to complete the compaction of a 1km section of road.

Easy to manoeuvre

Another key feature of the HD 30 VV is that the drums can be offset by up to 50mm relative to one another. This makes for simple, hitch-free operation and enables the machines to be manoeuvred easily and precisely in any situation, even when compacting along walls and kerbs. As a result, the HD 30 VV achieves perfect compaction results. This feature made the machine especially suitable for compacting the small city road close to houses and other buildings.

Top-quality compaction performance

The HD 30 VV's 3-point articulation ensures a uniform weight distribution between the front and the rear drum. Thanks to the articulation, the roller has a very small turning circle. The large drum diameters (720mm), greater than those of comparable models in the same weight class, are another quality feature. They help to prevent the formation of cracks and bulges, ensuring a high compaction quality. Moreover, the roller has a high static linear load and generates high centrifugal forces.

On this project, the HAMM roller worked perfectly with a VÖGELE SUPER 1900-3 L paver equipped with an extending screed.



Great driving comfort

All rollers of the HD CompactLine also offer great operating comfort. In addition, the HD 30 VV's articulated joint and low centre of gravity ensure stability in turns and prevent the machine from tipping, even on inclined bends.

On the job site, Gao Jian, the HD 30 VV operator, controlled the roller with ease and concluded: "The HAMM compact roller is easy to use, and it is perfectly suited to the compaction of rural and residential roads."

Wide range of applications for optimum utilization rate

Tongli Construction, the Nanjing-based owner of this HAMM roller, has a Grade 1 licence for general contracting in municipal engineering and a Grade 2 licence for general contracting in highway engineering, among other things. The company's areas of business include asphaltic concrete paving, municipal infrastructure construction, building construction, road construction and landscaping.

For Tongli Construction, this HAMM compact roller is versatile in a wide range of applications, since it is not only suitable for small job sites such as the one on the Moling country road, but also as a supplementary roller on large-scale road construction projects, where the very compact machine works together with bigger rollers.

The roller is equipped with a modern display for intuitive operation and an ergonomically designed operator's platform.

Highly efficient and cost-effective

Apart from the Zutang country road rehabilitation project, it has worked on a series of other road construction and municipal construction projects, for instance in Annan Town and on its surrounding roads in Jiangxi and on the Longpan Main Road upgrade and Nanjing Triumph Tunnel Road projects, among others.

Being a highly versatile machine, the new HD 30 VV has already racked up more than 550 working hours in the first six months since its delivery. The HD 30 VV has proven to be the right choice, delivering a high return on the original investment with its high productivity, excellent compaction performance and the labour cost savings it offers.





The HAMM compact roller is easy to use, and it is perfectly suited to the compaction of rural and residential roads.

Gao Jian, Roller Operator
Nanjing Tongli Construction Group Co., Ltd.



Highlights of the HAMM HD CompactLine tandem roller HD 30 VV

- > Articulated tandem roller with two vibrating drums
- > Large drum diameters
- > Compact dimensions
- > Excellent view of the drum edges, the machine and the job site surroundings
- > Simple, intuitive and language-neutral operation
- > Intelligent water sprinkling system
- > Ergonomic operator's platform
- > Easy transport, simple loading



In the 1960s, HAMM made a pioneering achievement in the compaction industry by inventing the pneumatic-tyre roller, and ever since then the company has continued to improve on this class of machine. Now the compaction specialist of the WIRTGEN GROUP has launched a new generation of this roller type: the HP series.

HAMM HP series:

A new generation of pneumatic-tyre rollers

Pneumatic-tyre rollers for every application:
highlights of the HP series

- > Very good visibility
- > Simple, intuitive operation
- > Large, comfortable cabin or operator's platform
- > Flexible ballasting concept
- > Innovative additive sprinkling system
- > Quick, convenient maintenance
- > Maximum safety



HP 180

Operating weight:
minimum 8t,
maximum 18t



Unique machine design

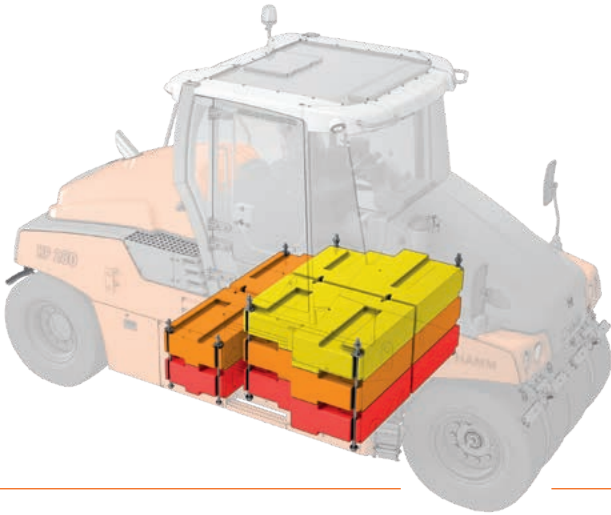
The new series unites proven advantages with attractive innovations: it offers, for instance, simple and intuitive operation and an ergonomically optimized operator's platform. The asymmetrical frame design gives operators a clear view of the outer flanks of the wheels at all times. And thanks to numerous well-engineered details, the machine delivers optimum compaction on every job. The enhanced, innovative water and additive sprinkling system is a brand new feature. HAMM has also optimized visibility and expanded the machine's unique ballasting flexibility.



HP 280

Operating weight:
minimum 9t,
maximum 28t

The HP 180 and HP 280 meet the requirements of exhaust emissions standard CN III and, with their numerous options, can be perfectly adapted to the widely ranging requirements of different regions.



Perfect conditions for optimum compaction quality: because the ballast chambers are located at the centre of the machine, the weight is always evenly distributed.



All maintenance work can be carried out easily and safely thanks to service points positioned on the right side of the engine, a maintenance guard rail next to the bonnet and fold-out steps with three large treads.

Attractive new models – proven advantages: HP 180 and HP 280

Flexible ballasting included

The HP series rollers incorporate a highly flexible ballasting concept which makes it possible to adapt the machine's weight quickly to suit asphalt type, layer thickness or application. Depending on the model and the basic weight, the ballast can be increased by up to 17t.

The principle: prefabricated ballast bodies made of steel, magnetite or concrete are simply inserted into or removed from the large ballast chambers between the sets of tyres. This can be done in the workshop or at the job site. HAMM offers various ballast body kits for achieving different weights.

Large tank volume for maximum productivity

All HP series models have a large main water tank plus an additional 1,500-litre tank. The water can be used entirely as a reservoir for the sprinkling system, or it can serve just as effectively as added weight that is easy to calculate and flexible to use. For fast re-filling, the machine developers included a fire hose connection (type C) in addition to the conventional filling port. It only takes about 3 minutes to fill up the whole tank.

The additional water tank is connected to the main water tank via pipes. The tanks can be completely emptied by means of a pump. Combined with the large diesel tank, these water tanks make the machines in the HP series highly productive.



Clear operating concept

On the operator's platform, everything is clear and comprehensible. For instance, all models boast an entirely language-neutral operating system that is quick and easy to master.

The few buttons are intelligently arranged. Colour-coded grouping supports user guidance. A joystick, which is ergonomically positioned in the armrest, is used for drive control.

View inside the HP 280: the modern and spacious workplace affords operators maximum visibility of the machine and the job site. It meets all ISO 5006-2017 requirements regarding the operator's field of view.



The efficiency turbo

A MOBIREX impact crusher in Beijing is keeping transport routes short and transforming tunnel overburden into a premium raw material.

XXIVth

Winter Games Beijing 2022:
the Xingyan Highway is part of
the Olympic infrastructure.



Job site details

Processing limestone for the construction of the Xingyan Highway

Length of section	42km
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Material

Type of stone	limestone
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Total quantity	300,000m ³ , approx.
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Final products	0/5mm, 5/10mm, 10/20mm, 20/31.5mm
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Working parameters

Feed size	0-400mm
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Total output of the plant combination	230t/h
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Equipment

KLEEMANN MOBIREX MR 130 Z EVO2 impact crusher

KLEEMANN MOBISCREEN MS 19 D triple-deck screen

Deployed by contractors at virtually every job site: the mobile crushing and screening plants from KLEEMANN ensure short transport routes because their crawler tracks give them access to places where the rock is being extracted - or in the vicinity of a tunnel job site, as here.

China | Beijing

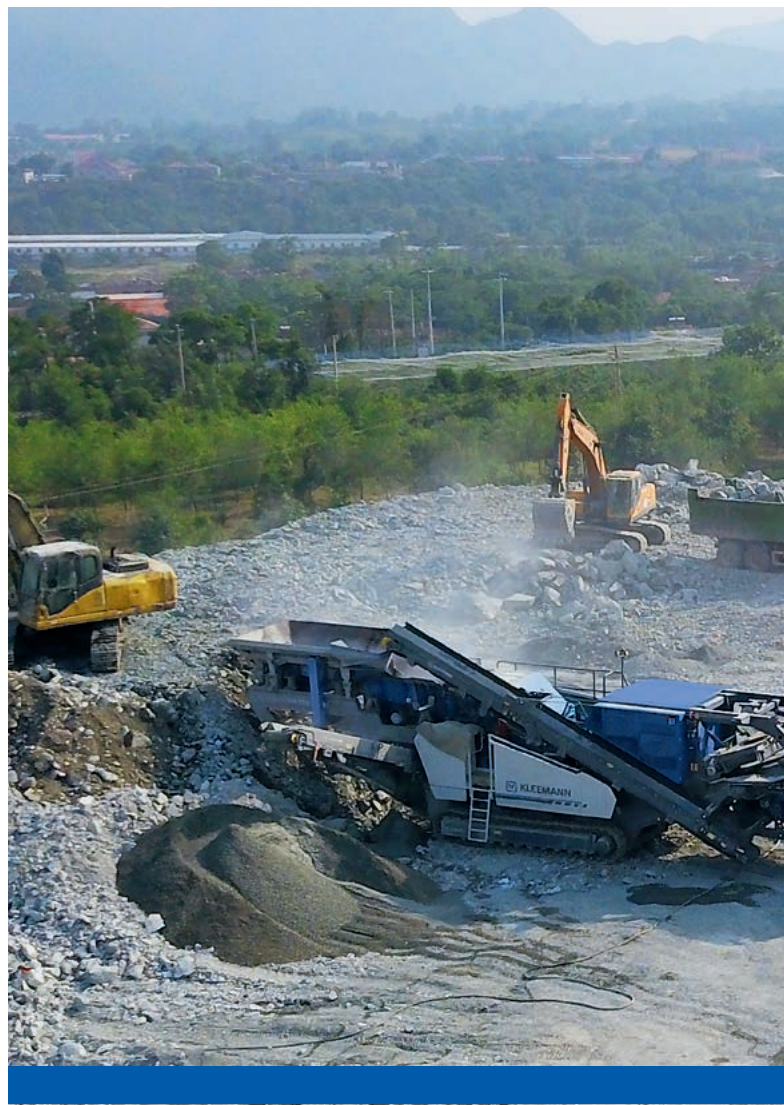


Processing trumps disposal: the highway made from tunnel overburden

- 100% recycling of the material obtained from boring a tunnel - eliminating all disposal costs
- Effective use of natural resources - reducing the quantity of rock extracted from quarries
- Processing on site, lowering transport costs and lorry emissions

Recycling of the final products:

- Grain sizes 0/10: shotcrete for lining the Baiyangcheng Tunnel on the Xingyan Highway in the Changping District of Beijing
- Grain sizes 10-31.5mm: concrete aggregate for construction of the carriageways of the Xingyan Highway



A tunnel supplies raw materials

The Xingyan Highway was an ambitious new construction project with four lanes over a length of 42km. It has since been opened for traffic. The new section connects the Northwest 6th Ring Road in the Beijing conurbation with the Yanqing District and was built with the 2022 Winter Olympic Games in mind. That's because the national alpine skiing centre and the Xiaohaituo national bobsleigh and luge runs are to be set up in the Yanqing District.

On the way there, in the Changping District, contractor China Railway Construction Corporation Limited (CRCC) won the contract for section III of the highway. The biggest challenge was to build two tunnels with a

length of 3.5km - one in each direction. The team on site impressively demonstrated that it is possible to make money from the obstacles that lie in one's path as opposed to incurring disposal costs. A key role here was played by a KLEEMANN impact crusher of type MR 130 Z EVO2. It processed tunnel overburden into new raw material for construction of the highway.



Conserving resources, lowering costs

with on-site recycling by means
of transport-friendly, track-mounted
KLEEMANN plants.



Efficient recycling

Recycling the tunnel overburden allowed two central aims to be achieved: conserving resources and saving costs. Recycling plays an important role for CRCC – and KLEEMANN technology provides invaluable assistance in this domain.

A large proportion of the material, 300,000m³ of the limestone, was processed in the vicinity of the tunnel job site. This, too, made a major contribution towards greater efficiency and hence cost-effectiveness. After all, short routes mean fewer lorries, less fuel and lower emissions. Once at the place of use, the job site vehicles unloaded the rock and excavators transferred it into the MOBIREX. After the crushing

process, the MR 130 Z EVO2 delivered the material to a MOBISCREEN MS 19 D triple-deck screen. This allowed four classified final products to be produced at a rate of 230t/h. The machine set had enormous power reserves, with the maximum output being twice as high.

Continuous crusher
utilization with
Continuous Feed System (CFS)

Crusher unit with innovative
C-shape rotor ledges for top
product quality



Large feeding unit,
hydraulically foldable
and self-locking

Effective prescreening
thanks to independent
double-deck prescreen

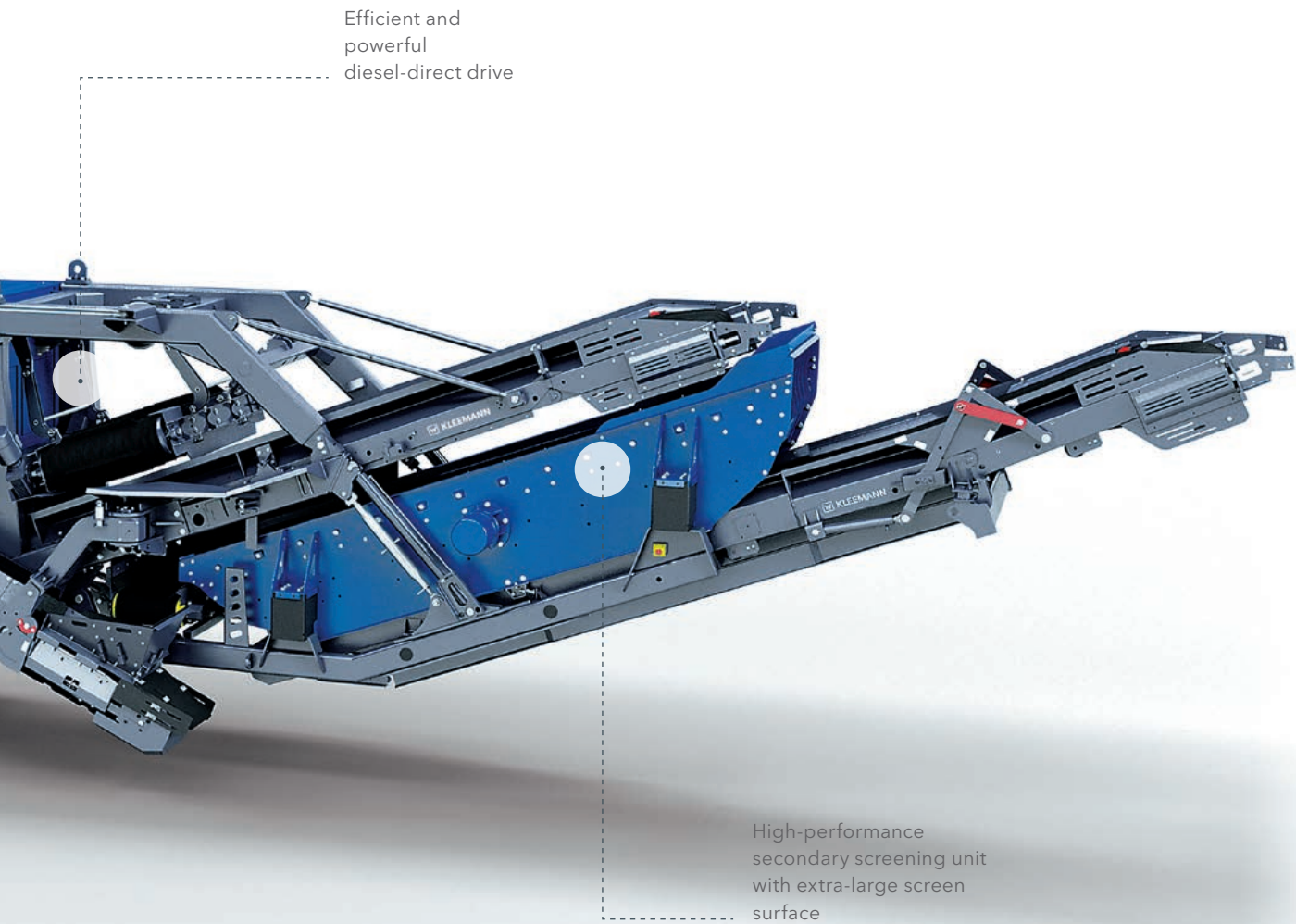
Simple and
intuitive SPECTIVE
control concept

The universal solution for soft natural stone and recycling:

Highlights of the MOBILEX MR 130 Z EVO2



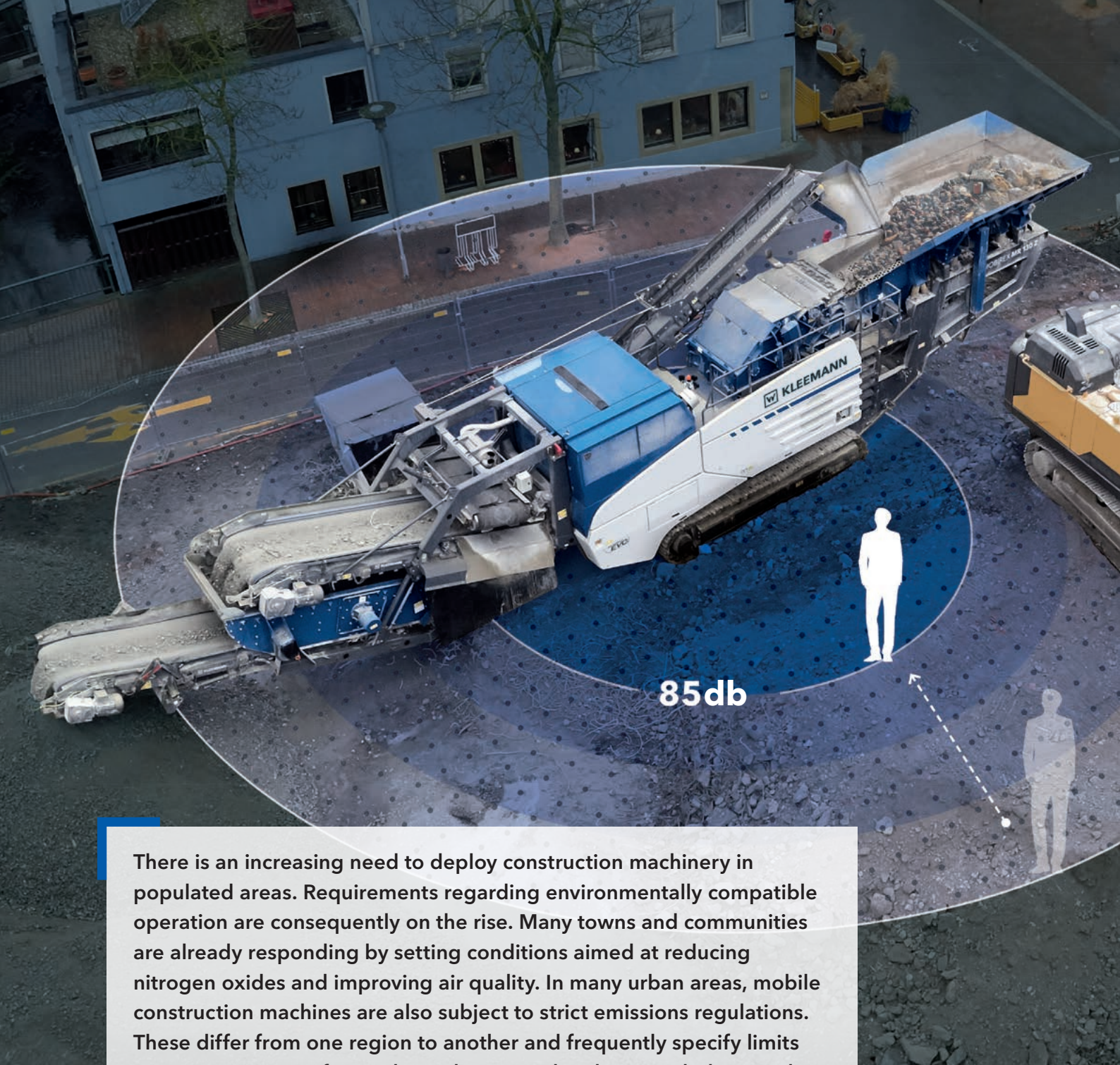
Wide variety of applications, simple
transportation, short set-up times,
high machine availability: the mobile
MOBILEX EVO2 impact crushers.



Advantages for users:

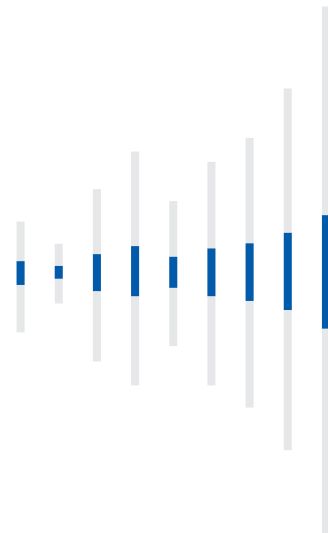
- > Optimized material flow: expanding system widths counteract material blockages
- > Transport and mobility: trouble-free loading thanks to greater ground clearance
- > Safety and user orientation: optimum accessibility of all components relevant to operation
- > Sustainability and acceptance: solutions for eco-friendly operation





There is an increasing need to deploy construction machinery in populated areas. Requirements regarding environmentally compatible operation are consequently on the rise. Many towns and communities are already responding by setting conditions aimed at reducing nitrogen oxides and improving air quality. In many urban areas, mobile construction machines are also subject to strict emissions regulations. These differ from one region to another and frequently specify limits on noise emissions from urban job sites and on how much dust can be produced.

The negative impact of noise and dust on people and the environment is well known. Many of those living next to construction projects are stressed and concerned about their health. This presents new challenges in mobile crushing. KLEEMANN has now set itself the goal of reducing the noise and dust emissions of its mobile plants in order to improve the environment for users and residents.





The situation

The primary causes of noise from mobile crushing plants are both the crushing process itself and the engine. The air routing, cooler and turbulent air flow in the area of the open bottom beneath the engine generate noise emissions. As a result, users have to wear ear defenders when working close to the machine.

The innovation

With the optional new noise-reduction package, sound-suppressing flaps are mounted laterally at the level of the engine, significantly reducing the noise generated. These flaps are collapsed against the machine for transport, meaning they have no effect on the overall transport width. Furthermore, the open bottom beneath the engine has now been closed off and soundproofed.

By taking these steps, KLEEMANN has significantly reduced both the noise level and the radius of perceptible sound. With the reduced noise level, teams can now also work near the machine in a noise-reduced environment.



- 6dB

Less loud, but just as powerful: the sound pressure level denotes the volume perceived by the user. The optional noise-reduction package reduces the noise by up to 6 decibels. As a comparison, a reduction of 3 decibels reduces the human ear's perception of noise by half.

**KLEEMANN noise and dust packages
reduce emissions:**

**Environmentally compatible
operation, increased acceptance**



The situation

Recycling building materials and processing natural stone are two processes which by nature generate relatively high levels of dust. The main sources of dust emissions are the material discharge and transfer points, and the crusher unit.

The innovation

With the optional new dust-reduction package, KLEEMANN minimizes dust right where it is generated. The spraying of water at various points on the crushing and screening plant, e.g. at the crusher inlet, crusher discharge conveyor, fine grain conveyor, lateral discharge belt and secondary screening unit (on the MOBIEX EVO2), binds most of the dust and prevents it from spreading.

The machines have an infrastructure for spraying water, to which various water-pump systems can be connected. In this way, the spray system can also operate with standing bodies of water or tank systems. Optional belt covers also promote better air quality when working with all KLEEMANN crushing and screening plants.





It's the spraying of pressurized water that makes the difference: dust is bound directly at the very point it is generated, keeping the air clean for the benefit of users and local residents.



KLEEMANN solutions for noise and dust reduction

On urban job sites, maximizing the ecological compatibility of crushing and screening plant operation is a key concern. KLEEMANN offers a new optional package to reduce noise in MOBIREX EVO2 impact crushers for such applications.

Part of the package of measures for reducing dust emissions in crushing and screening plants is included as standard equipment. The two innovative solutions protect both users and local residents - promoting the acceptance of KLEEMANN plants.



High-performance infrastructure
in the modern metropolis:
motorway intersection in Shanghai

