Vögele │ All-Electric Paving and Compaction

Pilot project with a Vögele Paver and a Roller from Hamm

A power grid upgrade project in Rangendingen, Baden-Württemberg, piloted the exclusive use of all-electric construction equipment – including a MINI 502e wheeled paver from Vögele and a Hamm HD 12e VT tandem roller.

Safer Working with Minimal Noise and Emissions

A cost-efficient and safe construction process, lower noise and CO₂ emissions – the concept of an all-electric construction site brings numerous advantages for construction contractors, personnel, and nearby residents. The lead contractor used only fully electric machines for the earthworks and road construction measures in the course of the power grid upgrade project in Rangendingen, Baden-Württemberg. The pilot construction site in Rangendingen is part of the “NETZbaustelle der Zukunft” (GRID Construction Site for the Future) – an ongoing program initiated by Netze BW, the largest grid operator for power, gas, and water in Baden-Württemberg. The pilot project served as a test to determine which measures can be used to carry out tomorrow's construction with lower-emissions, less noise, and in a more digitalized and safer manner.

E-Machines from Vögele and Hamm

Two new additions to the contractor’s fleet were used for the paving and compaction of the asphalt layer: an HD 12e VT tandem roller from Hamm and a Vögele MINI 502e wheeled paver. Both machines work with extremely low noise and zero local operating emissions. As a result, they are the ideal choice for use on urban construction projects with strict emission regulations. Their drive systems and the conveyors, augers, and screed heating of the wheeled paver are all-electric and feature particularly low energy consumption.

Power Enough for up to Two Days of Paving and Compaction

The paver and the roller began their day’s work in Rangendingen with batteries fully charged during the night before. The battery of the MINI 502e wheeled paver has a storage capacity of 22 kWh, while the tandem roller has a storage capacity of 23.4 kWh. Both machines offered sufficient energy for a running time of up to two days of paving and compaction. The paving team also had the opportunity to connect to an on-site power distribution box and familiarize themselves with the charging process. The machine operators were able to read off the current charge level of the respective machines from the displays on the control consoles at any time.

Quick Paving of the New Asphalt Layer

The MINI 502e undertook the paving of the 290 m long and 1.00 to 1.30 m wide surface layer. Controlling and monitoring the paving process was just as easy and convenient as with the diesel-powered models. With a basic paving width of only 0.90 m and working widths from 0.25 m to 1.8 m it was an ideal choice for the repair work on the narrow and partly winding sidewalk of the Königsberger Strasse. The compact wheeled paver requires only little space for maneuvering and has a very small turning circle. The team was therefore able to pave the asphalt surface course efficiently and in outstanding quality.

Electrically-Powered Conveyors and Augers

The MINI 502e has a large material hopper with a wide funnel-shaped opening that was fed with material from the side by a wheel loader. This made the transfer of the asphalt mix to the paver a particularly convenient and clean process. The asphalt mix was spread across the entire paving width by two electrically-powered spreading augers.

High Compaction Performance

The Hamm HD 12e VT roller followed on immediately behind the Vögele paver and compacted the paved asphalt. It is also an extremely quiet machine with a clear and simple handling concept. Other advantages were the high compaction force and precision of the small electric roller and its ability to compact precisely up to the edges of the paved surface. As is often the case on smaller construction sites, it also played out its particular strengths as a combination roller. The combination of dynamic compaction via the smooth drum and the kneading and fulling effect of the rubber tires not only enabled rapidly increasing compaction, but also ensured uniform surface sealing.

High Performance with Low Energy Consumption

The paving team drew a positive conclusion after completion of the construction project: the electrically-powered road pavers and rollers are very powerful, easy to operate, and have a minimal energy footprint. They draw power only when they are actually under load, which plays an important role in the achievement of cost-efficient construction processes. At the same time, the paving team and nearby residents benefit from the low noise levels and zero emission paving. “We are pleased to be able to contribute to the reduction of noise and environmental impact here on the site through the use of all-electric construction equipment,” says Jean-Pierre Liedtke, Site Manager at Leonhard Weiss.

**Photos:**

An image containing outdoors, sky, vehicle, outdoor space.

AI-generated content, may contain errors.

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Pilot project site in Rangendingen: In the course of a power grid upgrade project, the lead contractor fielded a battery-electric paver from Vögele and an electric roller from Hamm.

An image containing outdoors, sky, wheel, tire.

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Low noise level and zero local emissions: the drive, the conveyors and augers, and the screed heating of the MINI 502e wheeled paver are exclusively electrically-powered.

  
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Sufficient power for up to two days of paving: the battery of the MINI 502e wheeled paver has a storage capacity of 22 kWh and was able to be recharged from a power distribution box on the site.

An image containing outdoors, wheel, sky, ground vehicle.

AI-generated content, may contain errors.

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High compaction force and outstanding precision: the Vögele paver was closely followed by a Hamm HD 12e VT battery-electric roller, which compacted the paved asphalt immediately behind it.

**Videos:**



[Click here to view the video.](https://youtu.be/5AE3cfsDTVA)

**[You can find more videos on the Wirtgen Group YouTube Channel](https://www.youtube.com/@WirtgenGroup).**

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For further information, please contact us at:

WIRTGEN GROUP

Public Relations

Reinhard-Wirtgen-Straße 2

53578 Windhagen

Germany

Phone: +49-2645-131-1966

Fax: +49-2645-131-499

E-mail: [PR@wirtgen-group.com](mailto:PR@wirtgen-group.com)

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