

RoadNews

WIRTGEN Surface Miner technology

Maximum output excavating Indian coal



To all users of WIRTGEN GROUP technology and WIRTGEN GROUP customers in India – this is just for you:

WIRTGEN

Mining coal without blasting at all: at a coal mine in the state of Odisha, economical extraction of raw material by a WIRTGEN Surface Miner is convincing its users.



Job Report



Technology

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VÖGELE

SUPER 1403 wheeled paver: rugged technology and outstanding quality characterize the 'made in India' Universal Class.



Job Report

HAMM

Maximum output at an incline of 36%:
compacting a reservoir in the state of Telangana using 34 HAMM compactors of the 300 series.

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WIRTGEN Surface Miner technology Maximum output excavating Indian coal

India has large reserves of hard coal; this material is used as its most important source of energy. The Bhubaneswari Coal Mine, one of the biggest hard coal mines in the country, is located in the state of Odisha. Bhubaneswari Coal Mines Ltd. (BCML) has been open-cast mining since 2011 and successfully uses WIRTGEN Surface Miners for its operations.

The 220 SM 3.8 cuts soft rock in widths of 3.8 m and depths of up to 350 mm.

Safe method in 24/7 operation

At the Bhubaneswari Coal Mine, they work 24 hours a day to keep the coal-fired power stations nearby permanently supplied with raw material. Over 25 million tonnes of hard coal a year are handled in this process. Open-cast mining involves no blasting or drilling at all; instead, BCML relies on the safe method of extracting the soft rock by cutting it. Bairagi Sahu, associated vice president of BCML, is extremely pleased with the seven machines in use: "Especially where power is concerned, WIRTGEN Surface Miners are simply the best on the market. In our mine, we use a Surface Miner to cut up to 1,800 t coal an hour."

Managing without drilling or blasting also makes open-cast mining safer, as there is no need to store or handle explosives. Open-cast mine operators do not have to worry about permits or certified blasting personnel, either.

Optimized use of storage facilities

Extraction using WIRTGEN Surface Miners also delivers considerable economic benefits, with the level surfaces generated during the process of obtaining the coal acting as stable road surfaces to support the rapid transport of material – ordinary road trucks can even be used. Transport costs are reduced as a consequence, and this helps mining companies achieve lower production costs per tonne of material.

Extraction is also performed without vibration and with significantly less noise and dust emission, allowing material to be extracted right up to industrial areas, pipelines or high-voltage power lines. As a consequence, surface miners also



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Bairagi Sahu, Associated Vice President
Bhubaneswari Coal Mines Ltd. (BCML)





improve the use of storage facilities – and thus the income of open-cast mine operators.

Intelligent solution for soft rock

Exploiting the benefits of this method of operation to the full also requires intelligent solutions from the machine. A rugged Cummins diesel engine with a capacity of 708 kW ensures that the 220 SM 3.8 runs efficiently. High-pressure injection and an intelligent engine management system ensure that this engine uses fuel very economically. A supply of 2,300 l diesel allows operation 24/7 with just one refuelling stop a day, resulting in a high level of productivity.

A key factor in open-cast mining is the reliable availability of the machine, so all the components of the 220 SM 3.8 are designed for the extremely harsh conditions prevailing in open-cast mining. Filters in all the circuits, together with a pressurized hydraulic tank to ensure that the hydraulic system is as clean as possible, facilitate smooth operation. The long service life of the components and the minimal down time of the miner lead to higher productivity and efficiency overall.



Cutting instead of blasting:
WIRTGEN Surface Miners increase safety,
productivity and efficiency in open-cast mining.

220 SM 3.8 from WIRTGEN: windrowing specialist

The 220 SM 3.8 is designed for obtaining soft rock. This is demonstrated above all in the design of the 3.8 m-wide cutting drum. High, narrow holder bases on the drum ensure a good flow of material. The shape of the bases and the arrangement of the cutting tools also minimize the proportion of fines in the extracted material which is continuously deposited directly behind the machine in the form of a windrow, which is why this is also known as the "windrow method".

Om Prakash, chief operating officer at BCML, outlines an important benefit of windrowing: "This method of extraction makes it easy to judge the quality of the coal from its difference in colour against the pale waste rock; this enables us to extract the material economically."

The VÖGELE SUPER 1403 wheeled paver

Rugged technology, outstanding quality

Powerful and high-performing with a high-quality paving result

The SUPER 1403 is made for expanding the Indian infrastructure. Manufactured in the WIRTGEN GROUP factory in Pune, the Universal Class wheeled paver covers a versatile range of paving tasks from rehabilitating local and regional roads to constructing motorways. In completing all these tasks, the VÖGELE machine manages a width of up to 6 m and, depending on the type of material for paving, a thickness of up to 30 cm for first-class results. Strictly speaking, it is the electrically-heated AB 480 Extending Screed which is responsible for this. It can be infinitely adjusted in a range from 2.55 to 4.8 m, the maximum width being achieved using bolt-on extensions.

With its maximum capacity of 600 t/h, the rugged wheeled paver can process an enormous range of materials, including Wet Mix Macadam (WMM), a widespread paving material in India. A Heavy Duty kit is available to enable the machine to withstand even this highly abrasive material; the kit provides effective protection for areas and parts such as

the conveyor tunnel and the augers. Driven by a diesel engine with an output of 112 kW, pave speed is up to 18 m/min.

Simple ErgoBasic operating concept on board

With ErgoBasic, the SUPER 1403 also integrates the simple operating concept which controls all the VÖGELE Classic Line pavers. This minimizes the training requirement for users and makes their work easier. The steering wheel is furthermore integrated in the paver operator's console, allowing the paver to be controlled extremely accurately. The Pivot Steer steering brake delivers an outside turning circle of just 3.5 m, ensuring outstanding ease of manoeuvring. To deliver a high level of traction, even under difficult conditions, VÖGELE also supplies the wheeled undercarriage in a 6x4 version in which four of the six wheels are driven.

SUPER 1403

Developed in Germany, manufactured in Pune:
the SUPER 1403. Also typical of the
WIRTGEN GROUP - Customer Support is perfectly
organized - rapid on-site service included.



Highlights of the VÖGELE SUPER 1403 wheeled paver

- > Simple operation with ErgoBasic
- > Easy-to-use Niveltronic Basic System
- > Easy service concept
- > Combined with the AB 480 TV Extending Screed
- > Electric screed heating

Range of applications

- > Building of highways
- > Building of secondary roads
- > Commercial paving jobs
- > Municipal paving jobs
- > Placing of Wet Mix Macadam



HAMM 311D in action

Water for Telangana



34 HAMM compactors achieve top performances

34 HAMM machines of the 300 series were in action during construction of the Sri Komaravelli Mallanna Sagar Reservoir, compacting layer upon layer of different construction materials: soil, murrum soil and black cotton soil. The large number of machines is explained by the scale of the construction project – the reservoir dam is approximately 400 m wide at the base and is still 8 m at the very top. To complete the outer skin of the dam, compactors had to cope with an incline of approximately 36%, whilst compacting at the same time.

The 311D compactors from HAMM were convincing products in this situation, as their drum drive gives them an impressive ability to climb.

HAMM 311D: a reliable powerhouse

The engine with a rated output of 74 kW (100 hp) supplies the HAMM 311D with plenty of power to ensure a sustainable, stable amplitude output when compacting such steep slopes. Its static linear load of 30 kg/cm is every bit as impressive as its centrifugal force of 240 kN. This power leads to good compaction performance.

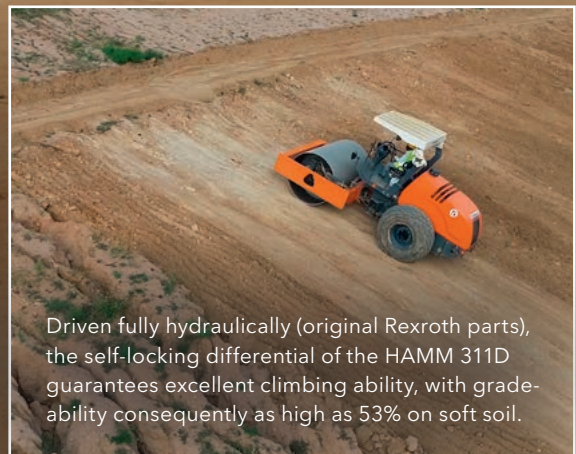


The Kaleshwaram Lift Irrigation Project is a gigantic irrigation project around the Godavari River in the state of Telangana. The aim is to supply this region, which has been extremely short of water for years, with a reliable source of drinking water and water for agricultural purposes. The work to build the holding ponds and the waterways between them has been running since 2018. The essential feature here is compaction of the substructure of the waterways and the dams. It was for precisely this purpose that HAMM compactors were used for part of the project along the Komaravelli Mallana Sagar dam.



HAMM 311D: outstanding working safety

Working with construction machines on a slope exceeding 35% involves potential safety risks including rollover or slipping which may injure machine operators and other workers on the job site. So it was lucky for everyone that the HAMM 311D offers a high level of safety because it can be fully self-locked by braking. This eliminates the phenomenon of slipping on the slope and thus avoids potential safety hazards.



Driven fully hydraulically (original Rexroth parts), the self-locking differential of the HAMM 311D guarantees excellent climbing ability, with gradeability consequently as high as 53% on soft soil.

100% duty:
the MOBISCREEN MS 953 EVO screening plant
from KLEEMANN classifies up to 4 grades of aggregate simultaneously,
mobilizing an output of 500 t/h.

