



Economical mining of hard rock

Surface Miner 2500 SM



Breaking new ground in the efficient mining of hard rock



Exploit mineral deposits right up to their boundaries

/// How to mine useful minerals efficiently when regulations prohibit drilling and blasting? The answer is simple: The tried-and-tested Surface Miner 2500 SM cuts and crushes hard rock, producing material that is immediately suitable for loading on trucks. This feat is accomplished in one single working pass with a method that is

both profitable and gentle on the environment at the same time. The mature, selective method produces raw materials of high purity and cuts clean and stable cross-sections in material that is unsuitable for ripping. In short, the 2500 SM concentrates its powers effectively and gets to the heart of the matter.

Wirtgen mining reads simple mining

◀ The miner is used either as the main mining machine or in combination with conventional equipment

▼ Selective mining offers many compelling advantages



- ▶ The mining operation causes no damaging vibrations and only little dust and noise as blasting can be dispensed with.
- ▶ Precisely cut cross-sections are cost-effective as they do not require time-consuming and expensive manual rework.
- ▶ The cut material can be used immediately as backfill, for instance, in road construction.
- ▶ Low expenses for labour, machines and project planning help to effectively reduce operating costs.

Conventional drilling and blasting is an out-of-date model



One surface miner accomplishes the job of several machines

/// Selective mining is “state-of-the-art” when it comes to economic efficiency. When all advantages are utilized, this innovative technology saves costs, produces raw materials of superior quality and exploits mineral deposits much more thoroughly than conventional methods. The 2500 SM not only supplants the entire equipment needed for drilling, blasting and loading but also makes short work of the

process itself: It completes the tough job in just one single working pass, saving considerable labour, machine and maintenance costs. Yet another advantage: The method effectively prevents uncontrollable vibrations and falling rocks and causes only little noise and dust, which permits mining close to residential areas or industrial estates.



◀ Surface miners are capable of exploiting even the peripheral areas of mineral deposits

▼ The 2500 SM combines many work steps

Cutting rock is
“en vogue”



- ▶ Accelerated approval procedures for mining by cutting as opposed to applications for mining by blasting enable mining projects to commence as early as possible.
- ▶ Cutting a cross-section reduces the operating costs as it minimizes wear and tear on tyres and crawler tracks.
- ▶ Stable cross-sections produced in earthwork and rock operations are suitable for immediate use as carriage-ways, embankments or tunnel floors.
- ▶ Additional, cost-intensive crushing of the mined material is not required.

Surface miner and miner operator: a strong team



Full control in tough day-to-day operation

Both the man and his machine are put to the acid test in the extremely tough conditions of day-to-day open-cast mining. Wirtgen's design engineers have made sure, therefore, that all major components of the surface miner 2500 SM are dimensioned for robust and failsafe operation. Solid crawler track units, wear-resistant cutting tools, high-performance loading conveyor – to name just a few.

The human factor plays an equally important role, however. All control elements are arranged in a user-friendly and ergonomically optimized manner to allow convenient working and to prevent fatigue. The swivelling driver's seat provides a good view, and the most important controls have been integrated into the right-hand armrest.



Geared for tough applications



▲ The height-adjustable discharge conveyor can be slewed by up to 90° to either side



Typical routing application: producing an embankment ▲
 A robust panelling on the inside protects the crawler tracks against wear and tear ◀

- ▶ The sound-insulated operator's cabin is equipped with air-conditioning as a standard feature, enabling the operator to always keep a cool head.
- ▶ The drum housing made from highly wear-resistant material is customized for superb cutting power in hard rock.

- ▶ The individual travel drive units can be hydraulically adjusted in height independently, offering ample ground clearance.
- ▶ The 2500 SM's excellent ground clearance ensures optimum manoeuvrability – even when things get tight.

Many intelligent functions are valuable assets



Ingenious systems speed up work processes

/// The flexible 2500 SM offers various options for loading the mined material. Depending on application requirements, the material can be loaded directly on trucks via a conveyor system, deposited in a windrow behind the machine or discharged to the side of the machine by means of the slewable discharge conveyor. The cut material doesn't require additional processing, but is suitable nonetheless for

subsequent mixing with other materials. An intelligent solution was also found for transporting the 2500 SM, which is often difficult with machines of this size. The surface miner is simply dismantled into two separate modules that can then be transported on standard low-loaders. A smart detail: The operator's cabin can be folded down, reducing the miner's transport height.

Heavy equipment – easy transport



◀ Filling the generously dimensioned water tank

▼ Discharging the cut material to the side of the machine enables subsequent mixing



▲ The operator's cabin of the 2500 SM can be folded down for easy transport



- ▣ The hydraulically opening scraper blade provides easy access to the cutting drum, allowing cutting tools to be replaced in a comfortable working posture.
- ▣ An optional water spray system is available for the cutting drum and the loading conveyor, which prevents the development of dust and extends the service life of the individual components.
- ▣ Mature electronic levelling technologies guarantee consistently accurate cutting depths.
- ▣ The miner's travel speed can be continuously adjusted in both operating and travel gear, enabling it to be adapted to any given working requirement.

Customized machines – our recipe for success



Specific requirements are incorporated into the machine design

/// The surface miner 2500 SM consists of a basic machine concept that is adapted to specific application requirements and to the hardness of the material to be mined. The basic model usually operates in open-pit mining, efficiently cutting soft to medium hard rock with unconfined compressive strengths of up to 80 to 120 MPa. The miner is equipped with components of a more robust design

when used for mining hard limestone or for cutting extremely hard granite in routing or earthwork and rock operations. Special models are capable of mining even extremely hard rock of up to 260 MPa without blasting. Irrespective of the material hardness, however, they produce stable and precise embankments or cross-sections.

The right machine for the right application

Tremendous strains and vibrations in hard granite require the 130-ton giant to be operated by remote control



▲ Specifically designed for efficient operation in hard limestone



- Extremely robust machines for extremely hard rock – a 2500 SM applies its weight of 130 tons to make a stand against hard granite of 260 MPa.
- Different types of cutting tools, specifically developed for particular degrees of hardness, are used in different rock hardnesses.

- The surfaces produced in the cutting operation can be used as haulage roads to transport the mined material away.



Wirtgen GmbH
Hohner Straße 2 · 53578 Windhagen · Germany
Phone: +49 (0) 26 45 / 131-0 · Fax: +49 (0) 26 45 / 131-242
Internet: www.wirtgen.com · E-Mail: info@wirtgen.com