

Underground civil construction

A complete project guide



A comprehensive offering for civil construction projects

Epiroc is a leading productivity and sustainability partner that offers complete value-creating solutions for the civil construction and mining industries. By understanding the importance of offering more than a product, we accelerate the transformation toward a higher level of productivity and a successful project.

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Introduction

At our core, we prioritize safety and sustainability in all our operations and solutions. We design our innovations with a primary focus on safety, and our commitment to sustainability mirrors yours.

From the inception of your project, our dedicated team with extensive application and product expertise will be by your side. We aim to be more than just a product supplier; we strive to be your essential partner in every aspect of your civil construction project.

Our goal is to provide you with the most effective project proposals that address your specific challenges while ensuring efficiency in terms of time and cost. This approach maximizes the utilization of our entire fleet.

Our commitment extends beyond product supply. From the initial consultation through training and ongoing service support, we remain your dedicated partner throughout the project's lifecycle.



FIND OUT MORE

Equipment and attachments

Digital solutions

Service and consumables

Financial solutions

Digital tools

Mastering your operations with Underground Manager

Underground Manager is a digital solution that seamlessly connects machine data across various units in the tunneling sequence. The platform plays a pivotal role in the administration of drilling, grouting, and bolting processes within tunneling projects. It stands as a robust and versatile tool for planning, assessment, and comprehensive reporting of operational insights. Furthermore, it offers the seamless transfer of log files and drill plans to and from the rig while enhancing integration capabilities with other systems.

Effortless planning and precision

Creating a drill plan has never been easier – simply import or define the tunnel's contours in Underground Manager. This plan can then be effortlessly downloaded onto the machine.

Optimizing rock reinforcement

MWD data (Measure While Drilling) from the drill rig plays a crucial role in determining rock reinforcement needs and the number of injection holes required. The grouting unit utilizes this drill data to define hole identity and geometry, with the grouting control system generating MWG data (Measure While Grouting) for the comprehensive grouting report.

Underground Manager's auto-generated bolt plans empower you with unparalleled bolting precision, leading to significant time and cost savings.

Documentation excellence

The combined data gathered during operations forms the foundation for comprehensive as-built documentation covering drilling, grouting, and rock reinforcement processes.

Situational awareness

Boosting safety and productivity

Mobilaris Tunneling Intelligence stands as a cutting-edge digital support system designed to enhance safety and productivity. This system serves as the vital bridge connecting individuals, machinery, and tasks, offering an integrated solution for shift planning, work progress tracking, asset management, and personnel coordination.

A proven solution

The system is already making a significant impact in Scandinavian tunnels, driving efficiency and safety. Mobilaris Tunneling Intelligence provides a comprehensive range of features, from real-time positioning and resource optimization to detailed shift reports and data analytics. It even facilitates the evaluation of evacuation training, machinery utilization, and delay code statistics.

Streamlined documentation and reporting

With the Operator Client, pen and paper is replaced with an easy-to-use digital solution to document and report work done in the tunnel.

Our solution ensures that work is reported with minimal effort. By doing so during work progression, data accuracy is maximized, supporting the optimized flow of subsequent tasks. This approach minimizes time wastage and enhances project completion. Data can also be used to optimize upcoming shifts as well as quotation for next project.



Ventilation

Maximizing effectiveness

The cost of ventilation is a substantial portion of any project's operational expenses, typically accounting for one-third of the total. At Epiroc, we offer a comprehensive solution to address all your ventilation requirements. Our range includes cutting-edge fans, state-of-the-art ducting, advanced accessories like dampers and diverters, and intelligent systems such as Ventilation On Demand.

Pioneering quality assurance

Our commitment to quality is unwavering. We maintain a state-of-the-art testing facility, where every product is meticulously assessed. Each fan is rigorously pushed to its limits, ensuring that vibrations remain well within stringent thresholds, and performance is optimized for peak efficiency. We go above and beyond in delivering the latest technology to our clients.

Ventilation On Demand - efficiency redefined

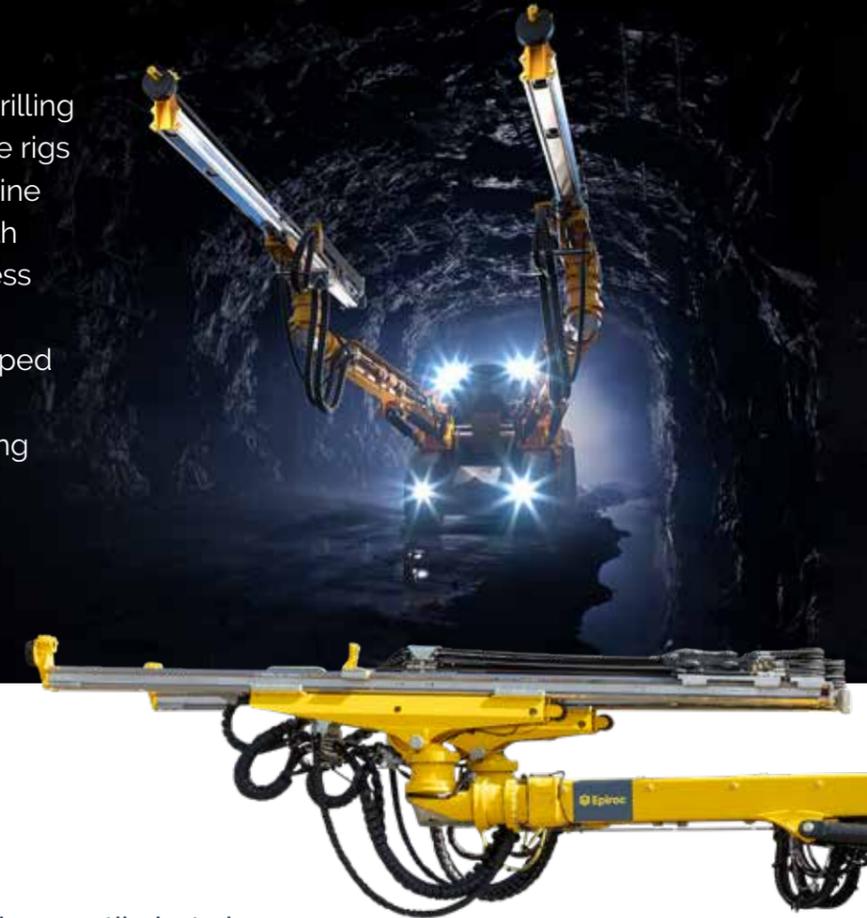
Our advanced Ventilation On Demand system is a game-changer. It transcends the realm of air quality and focuses on energy savings. With automatic operation and intelligent controls that adapt in real-time to changing conditions, this system ensures optimal energy efficiency, minimizing costs and maximizing performance.



Face drilling

Precision and versatility

The Boomer E-series face drill rigs represent a fusion of technology and automation, significantly enhancing drilling efficiency, accuracy, and safety. These rigs are equipped with features that redefine the standards of precision drilling, with accurate hole positioning and seamless automation of drilling functions. The ergonomic operator cabins are equipped with the state-of-the-art controls and provide exceptional visibility, prioritizing operator comfort and safety.



Diversity and performance

The Boomer E-series is not only highly versatile but also engineered for exceptional performance. It can be customized to cater to the specific requirements of diverse tunneling projects, ensuring it meets your unique needs.

In addition to conventional face drilling, the Boomer E-series excels in drilling injection holes and probe-holes with the fully automatic Rod Handling System, capable of adding and removing rods of up to 30 meters. The robust BUT45 booms enable it to handle pipe-roofing applications as needed.

Seamless and safe operations

Epiroc's Rig Control System RCS 5 guarantees a safe and user-friendly operation. Operators can effortlessly monitor and control all rig functions, allowing for a heightened focus on safety during drilling operations.

Grouting

Empowering infrastructure



Grouting is an indispensable engineering technique applied to both ground and structures, meticulously tailored to achieve specific characteristics. This method plays a pivotal role in mitigating potential risks and ensuring the safety and durability of structures and facilities.

Tackling contemporary tunneling challenges

The tunneling industry faces a host of contemporary challenges, including heightened demands on water resources management, compliance with elevated safety standards, and navigating challenging ground conditions in urban environments. Grouting is emerging as a key method in tunneling projects to serve various purposes, including controlling water ingress and to improve ground properties.

Grouting boasts a rich historical background, serving as a go-to ground treatment method in a wide array of surface and underground applications, addressing diverse challenges. With new dam construction on the rise and existing ones undergoing renovation, grouting remains an integral component in countless dam projects, frequently employed for sealing, strengthening, and filling tasks, including curtain grouting.

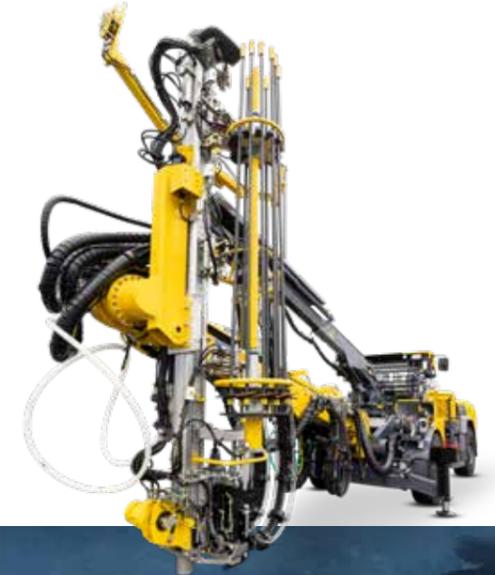
A versatile and reliable grouting portfolio

Epiroc offers a versatile and reliable grouting portfolio, catering to a diverse customer base. Our Unigrout units represent comprehensive grouting solutions meticulously designed to streamline mobilization, enhance user-friendliness, and maximize grouting efficiency.



Rock reinforcement

Elevating safety and quality



When it comes to rock reinforcement, three key factors take center stage: productivity, operator safety, and bolt installation quality. At Epiroc, these are the pillars that define our Boltec rigs.

Ensuring consistent quality

Consistency in bolt installation quality is paramount. Our Rig Control System provides detailed data, including precise hole positioning, hole length, cement consumption, water-cement ratio, and more. This invaluable information serves as the foundation for robust reporting and evaluation processes.

Comprehensive training solutions

Epiroc goes the extra mile to ensure our operators are well-prepared. We offer a comprehensive training program, encompassing both theoretical and practical aspects, delivered by knowledgeable staff. This ensures that all operators possess the essential skills and knowledge required to excel in their tasks.



Loading and hauling

Commitment to excellence



Epiroc's high-performance underground LHDs represent the pinnacle of design, focusing on four key pillars: reliability, serviceability, safety, and operator comfort.

Excellence in underground loaders

Underground loaders from Epiroc are built to perform. With safety at the forefront, we've integrated ergonomic and automated features into our Scooptram loaders, ensuring that you find the perfect match for your needs. We offer a range of loaders, including emission-free and diesel options, tailored to your specific requirements.

The versatility of Minetruck

Epiroc's Minetruck models, capable of handling up to 65 tonnes, offer a versatile solution for underground mining and tunneling applications. Operators of our Minetruck vehicles experience exceptional comfort with optional ergonomic controls and air conditioning, promoting productivity and reducing operator fatigue. Many of our Minetruck models are available with both diesel and battery-electric drivelines, providing a versatile solution for various applications.



Continuous loading

Enhancing efficiency in tunneling and mining

The Häggloader stands as the ultimate solution for cost-effective tunneling and mining operations. Distinguished by its continuous loading system, versatility, and an unrivaled loading capacity of up to 5m³/min, the Häggloader delivers a remarkable boost in efficiency while simultaneously reducing operational costs.

A commitment to safety

Safety remains paramount in mining and tunneling endeavors, and the Häggloader is engineered to meet the most stringent safety standards. Its features include an oil-free operator environment, strategically positioned cameras for enhanced visibility, and protective bars designed to ensure operator well-being.

Select from two boom options – dual digging arms or backhoe – to optimize productivity in your mining or tunneling operation. The Häggloader offers customizable configurations that guarantee peak performance.

Innovative attachment solutions

The Häggloader's sliding attachment combines a hydraulic breaker and a bucket within the boom system, facilitating safer work procedures and enhancing flexibility in handling oversized rocks. Furthermore, the Häggloader boasts a hybrid design, featuring a combined diesel engine and electrical motor. Its electrical operation is conducive to low ventilation demands when compared to traditional engine-driven systems.

Revolutionize your tunneling and mining operations with the Häggloader's state-of-the-art features, remarkable loading capacity, and cutting-edge attachments.



Hydraulic attachment tools

Pioneering hydraulic breakers and drum cutters

Epiroc's hydraulic breakers and drum cutters have been indispensable in a multitude of underground operations. Our legacy in this field is deeply rooted, with the very first hydraulic breaker invented, and built, in 1963. Since then, we have consistently invested in development and innovation to ensure we retain Epiroc's market leading position.

Embracing the underground revolution

Going underground is rapidly becoming the only viable option for meeting the infrastructure needs of the 21st century. The experts from UN expect that by 2050, two thirds of the world population will be living in urban areas giving us a promising business opportunity.

Consumables

Your premier destination for rock drilling tools

Epiroc boasts the most comprehensive range of rock drilling tools available in the market. For the majority of infrastructure and civil construction projects, our tophammer equipment stands as the clear choice. Our offerings include a drill string of unparalleled quality, where our shank adapters, drill rods, and powerful drill bits are recognized as the industry's finest.

Exceptional support and service network

On top of this, Epiroc gives you access to the strongest service and support network in the industry. To test our products, thousands upon thousands of metres have been test-drilled. And they all tell the same tale – Epiroc's rock drilling tools are more reliable, more long-lasting and more productive than any other brand.

Unmatched performance and economy

This translates into outstanding penetration rates and excellent drilling economy for you. Whatever your tunneling needs, look no further than Epiroc for rock drilling tools.

Aftermarket and service

Optimizing your operations

Our service offering is developed to optimize our customers' operations. We deliver safety, high productivity and peace of mind. To secure uptime of your equipment we offer several levels of service agreement, tailor made for your requirements.

Elevating reliability

With our advanced Rig-Scan audit, we fortify the reliability of your equipment. This professional assessment guarantees that your operations remain consistent and dependable.

Empowering performance

Our commitment to service extends to professional operator training, equipping your team with the skills needed to enhance equipment performance safely and efficiently.

Global support

With a global network of skilled service engineers, we are unwavering in our dedication to support you, regardless of your location or the time of day. We prioritize parts availability through strategically positioned distribution centers worldwide, ensuring that you have access to the necessary components whenever and wherever you need them.

Financial solutions

Unlocking sustainable productivity

We finance your investment in sustainable productivity

Choose from a wide range of financing solutions for all types of Epiroc equipment. We offer payments customized to suit your plans and projections. There are different types of financial products, and their use varies from market to market. The most common ones are:

Supplier credit agreements (available in most markets)

The customer buys the equipment and ownership is transferred at delivery. The purchase price plus interest is paid over an extended period, according to a pre-agreed payment plan (normally 12-60 months). Normally (in many markets it is mandatory) we require a down payment of 15% to be effected at order. There is a repossession clause in the agreements stating that if the customer doesn't fulfill their payment obligations, Epiroc has the right to repossess the equipment.

Finance lease/capital lease (available in selected markets, mainly OECD countries)

Epiroc keeps the ownership of the equipment and the customer uses it against payment of lease fees during the lease period. The payment plan is based on the purchase price plus interest with a low residual value - normally less than 10% of the purchase price. Ownership is transferred to the customer at the end of the lease term when the residual value is paid.

Operating lease (available in selected markets, mainly OECD countries)

Lease with a higher residual value. At the end of term, the equipment may be returned or purchased at fair market value. The customer can also choose to extend the lease term. The intention is not automatically that the customer shall acquire the goods at the end of term. The customer pays a lease fee which is accounted for as an operating expense in exchange for using the equipment.

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