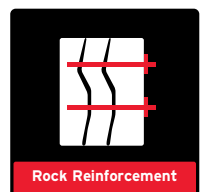


FOR TOUGH JOBS



Rock Reinforcement



Construction Chemicals



Equipment



Life Time Care

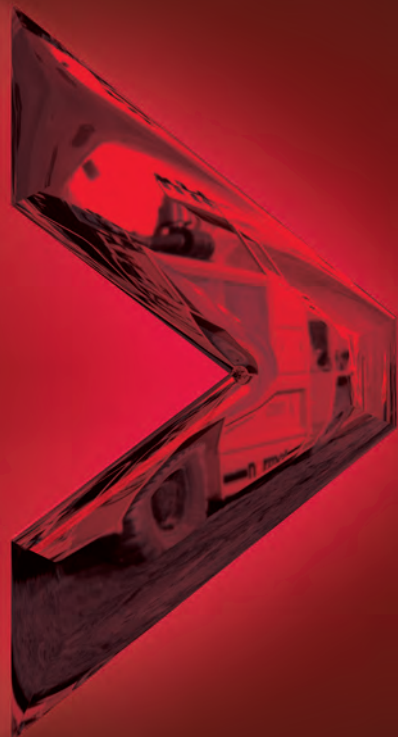
VISION & MISSION

> Vision

The fast growing and innovative technology company with a passion to offer continuous improvement to our underground mining and tunnelling partners' processes for increased safety productivity and sustainability.

> Mission

Improve underground mining and tunnelling processes with knowledge and technology to benefit our clients and society



NORMET HAS A BROAD UNDERGROUND OFFERING:

- > Equipment for concrete spraying and transport, explosives charging, scaling, lifting, installation works, and logistics.
- > Construction chemicals for sprayed concrete, admixtures for all types of concrete, injection systems for groundwater control and ground improvement, reinforcement systems for high deformation conditions, spray applied waterproofing systems and needed chemicals for TBM technology covering hard rock, EPB, open face and slurry type machines
- > The new generation energy absorbing rock bolting system; the D-Bolt® system specially designed for efficient and reliable rock reinforcement, in both squeezing and burst-prone strata conditions

Normet has delivered over 11,000 built-for-purpose underground machines which are serviced and supported with Life Time Care.

Normet currently employs about 900 business professionals and net sales in 2015 was over 190 million euro.

Normet is a Finnish based company that operates globally with over 43 locations in 28 countries worldwide.

1962

Peltosalmen Konepaja Oy



1971

Orion Corporation Normet



2005

Normet Group



2008

Acquisition of Semmco



NORMET'S ESSENTIAL VALUE PROPOSITION - "FOR TOUGH JOBS"

ABOUT OUR EXPERTISE

Normet is virtually exclusively focused on the disciplines of underground mining, tunnelling and civil construction. We live in your world on a day-to-day basis. We come from the industries; we speak your language; we understand your objectives. We understand HSQE, engineering, development, production cost/productivity drivers and management. Your challenge is our challenge.

We understand that development cycle time and production effectiveness are important to you. We work with you to optimise these. We believe that Total Value of Ownership/Partnership is a very important metric.

Normet brings process expertise to bear which has been amassed over thousands of mines and projects all over (and under) the globe. This broad perspective means that we've seen, and learned, a lot about what should and should not be done to achieve the optimum results. We improve underground mining and tunnelling processes with knowledge and technology. We translate process expertise into actions and results which you can measure financially.

NORMET IS

... a fast growing and innovative technology company with a passion to offer continuous improvement to our partners' processes for increased safety, productivity and profitability.

ABOUT OUR TECHNOLOGIES

Normet has a broad underground offering:

- > Equipment
- > Construction Chemicals
- > Rock Reinforcement

ABOUT OUR PROCESSES

Normet, more importantly, has a wealth of expertise and experience (over 50 years) in your pertinent, specialized processes such as Ground Support, Explosives Charging, Equipment Life Cycle management, TBM operations and other innovative applications. This boils down to understanding your processes in which our technologies are employed, and improving the overall processes to your benefit.

ABOUT OUR PEOPLE AND ORGANIZATION

Normet is both local and truly global with respect to our customers' operations; we operate in all relevant markets around the world, from 43 locations, interacting directly with our customers. Over our lifetime, we have delivered over 10,000 built-for-purpose underground machines. We also service machines and support the rest of our offering with Life Time Care. For many processes, we are a "one stop shop".

We nurture inspiration in our employees and they have a passion for doing "big" things for Normet and for the industries we serve. We travel; we go to your project wherever it may be; we go underground; we get our hands dirty. We spend the time with our customers and we invite our customers to be an integral part of our Research and Development processes.



RESEARCH & DEVELOPMENT

Normet's R&D teams develop our products constantly to add value to our customers' underground processes.

EQUIPMENT R&D FOR TOMORROW

New ideas are generated and products developed in close partnership with our customers. Customers are an inseparable part of all stages of development projects. Normet's own R&D network consists of partners in fundamental research, automation development, industrial design and engineering. Partnering organisations are universities, public and private research centres, special consultants and component, software and engineering service suppliers.

Development projects start with idea creation and filtering, collecting good ideas and establishing a new product development project. The NPD project then follows a systematic Stage-Gate process including different phases, from a feasibility study, implementation evaluation, modelling and design, prototyping and testing through to final customer approval and launch.

Development is often based on standard product platforms to operate in all work processes, such as concrete spraying, explosive charging, scaling, underground installation works, personnel and material transport. Standardised and modular platforms answer every need, from basic transporters to fully automated self-propelled rock support machines. The platforms themselves are continuously being developed.

For controlling the work process and carrier-related machine functions, the fully modular NorSmart CAN bus control system has been developed to meet demand now and in the future. Our NorSmart allows new applications and features to be easily created and integrated in the machines, even later on.

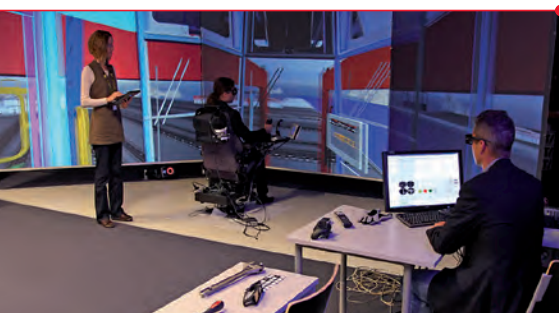
Throughout our standardized development and engineering processes, we use state-of-the-art software, with full 3D mechanical design and special programs for electrical and hydraulic design and for stability and strength calculations. All product structure and lifetime data is collected globally and managed with a PDM / PLM (Product Data Management / Product Lifetime Management) system. Modern simulation tools are used in developing new technologies, ergonomics, energy efficiency, equipment communication and monitoring.

See you in the future.

LEADING DEVELOPMENT IN CONSTRUCTION CHEMICALS

All across the world, Normet has testing capabilities and experts dedicated to constantly developing the construction chemicals range to ensure that the products are up to date with the latest technology, while enhancing safety and reducing environmental impact.

We believe in actively contributing to this industry's quest to leave lighter footprints on our earth. We recognise the importance of manufacturing and supplying quality solutions that have minimal environmental impact, and we ensure the safest systems for miners and operatives in their daily work. Our research and development ethos is to promote increasingly safer and environmentally sound construction chemical solutions.



CONSTRUCTION CHEMICALS

5

Normet strives to provide you with a complete range of construction chemicals for underground construction and mining. We aim to deliver technical solutions that create maximum value by saving costs and shortening process cycle time, while also improving safety and reducing uncertainty. From production all the way through to application, our solutions are fundamentally developed with the welfare of people and care of the environment in mind.

OUR UNIQUE COMPLETE SOLUTION

We offer a range of construction chemicals focused on underground construction and mining. Our solutions are ideal right from the start of projects, such as ground treatment of fissured rock or soil and construction of deep box structures, through to tunnel or mine support with sprayed concrete, and finally to maintaining and extending the service life of underground structures.

Normet construction chemical solutions are designed to support all types of tunnelling methods including the tunnel boring machine (TBM), drill and blast, and mechanical excavations for different rock and soil types. As we understand the importance of stability in the rock during the extraction process in mines, we have a range of both foaming and non-foaming injection resins suitable for stabilising all rock types including coal, soft and hard rock strata.

Apart from our solutions for the tunnelling and mining industry, Normet Construction Chemicals prolong the service life of structures worldwide through the use of high build mortars, epoxy resins, spray mortars, epoxy mortars and a full range of polyurethane-based resins. We also offer a package of watertight solutions, including integral treatment, construction joint systems, surface applied penetrative treatments, liquid-applied coatings and sheet membranes, guaranteed to waterproof all types of structures.

SYSTEMS WHERE HIGH PRODUCTIVITY CAN BE ACHIEVED, WITHOUT SACRIFICING SAFETY

Offering for:

> Concrete Admixtures

- Sprayed Concrete
- Precast Concrete
- Cast-in-Place Concrete

> Waterproofing

- Spray-On Lining
- Leak Sealing

> Injection

- Water Control
- Ground Consolidation

> TBM

- Soil Conditioners (Foams & Polymers)
- Tail Sealants
- Main Bearing Greases
- Annulus Grout Additives

> Spray-On Support Liner

> Mine Backfill



SPRAYED CONCRETE - CONCRETE SPRAYING

Using Normet's spraying process and systems contributes to outstanding quality sprayed concrete, while assuring our customers of safe and successful tunnelling and underground mining operations with high productivity.

SPRAYED CONCRETE FOR SAFE TUNNELS

Today, the use of shotcrete in mines, tunnels and other civil engineering structures is an important and integral part of successful, highly productive and safe rock support systems.

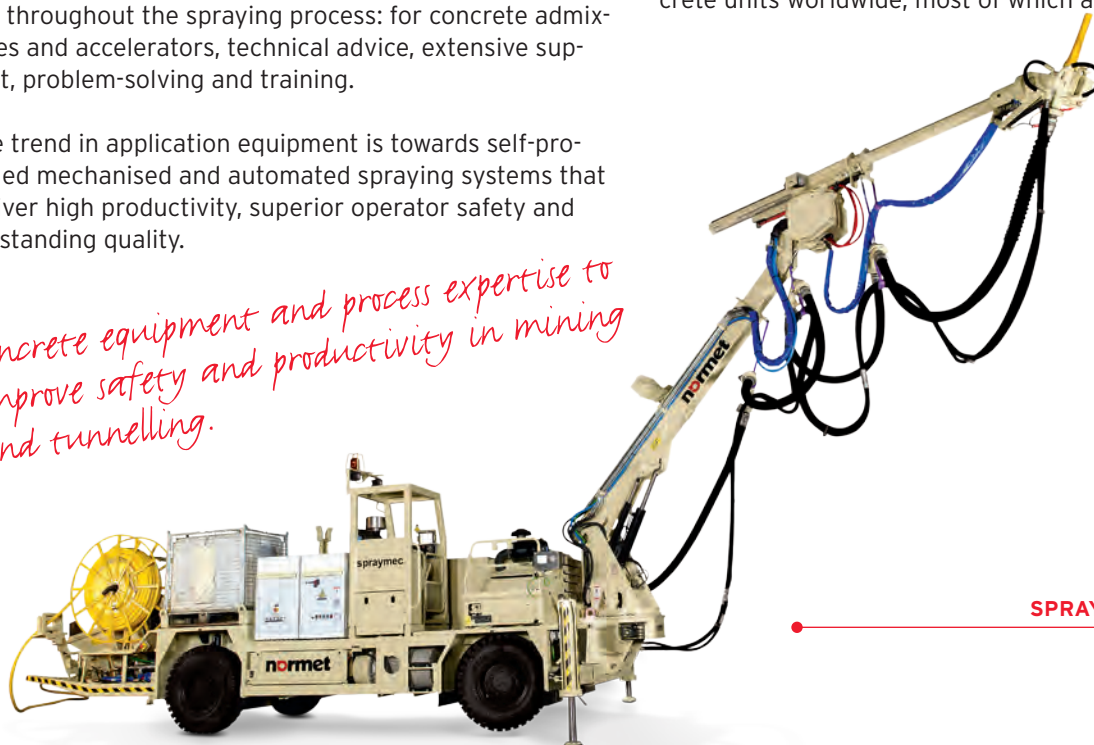
In addition to offering our complete range of equipment and Life Time Care services, we are also your expert partner throughout the spraying process: for concrete admixtures and accelerators, technical advice, extensive support, problem-solving and training.

The trend in application equipment is towards self-propelled mechanised and automated spraying systems that deliver high productivity, superior operator safety and outstanding quality.

Concrete equipment and process expertise to improve safety and productivity in mining and tunnelling.

Our mobile sprayers are the result of 50 years of experience in underground works and of close partnerships with tunnelling and mining customers across the globe. All Spraymec models are available with an electro- or diesel-hydraulic configuration and an optional on-board compressor.

Normet has sold hundreds of these durable sprayed concrete units worldwide, most of which are still in use today!



SPRAYMEC 8100 VC

PRODUCT RANGE:

- > Spraymec SF 050 series
- > Spraymec MF 050 series
- > Spraymec LF 050 series
- > Spraymec 5070 VC
- > Spraymec 5100 VC
- > Spraymec 8100 VC
- > Spraymec NorRunner 140 DVC
- > Minimec
- > NorStreamer 30V
- > Alpha 1430 series
- > Alpha 20
- > Alpha 30
- > Meyco Piccola
- > Meyco GM
- > TamCem 53 / TamCem 60
- > TamCem HCA / HCA+
- > TamCem iCure
- > TamCrete CR
- > TamCrete EasyClean
- > TamCrete NanoSilica
- > TamCrete PLL
- > TamShot series
- > Concrete Spraying Simulators



SPRAYED CONCRETE - CONCRETE TRANSPORT

7

Logistics are an integral part of a successful sprayed concrete operation: getting the high quality concrete from the batching plant to the working face as safely and effectively as possible.

CONCRETE WHERE YOU NEED IT

Normet offers a large range of mobile concrete transport equipment to meet the needs of the mining and tunnelling industries. All our transmixers are designed to improve safety and productivity in underground works.

Our transmixers and agitators feature different sized horizontal or tilting drums and powerful engines for fast driving speeds. A soundproofed operator's cab is a standard option for sprayers and all our transmixers and agitators.

With hundreds of units delivered worldwide, Normet's transmixers have proved their durability and are recognised for excellence in quality.

Our transmixers and agitators improve safety and productivity in underground works.



UTIMEC LF 600 AGITATOR

PRODUCT RANGE:

- > Utimec LF 500 Transmixer
- > Utimec LF 600 Transmixer and Agitator
- > Utimec MF 500 Transmixer
- > Tornado S2
- > Variomec MF 050 M
- > Multimec MF 100 and Mixer Cassette
- > Multimec SF 060 and Mixer Cassette



CHARGING

Our Charmec systems are built to improve safety and productivity in underground blasting and contribute to high quality and cost effective bulk explosive charging.

THE NO. 1 CHARGING SYSTEM

Successful drill and blast excavation in underground mines and tunnels ensures professional, productive and safe charging and blasting. While rock and groundwater conditions and local legislation dictate the types of explosives that can be used, all drilling and blasting operations have one thing in common: no method of charging will make up for poor drilling, but good quality drilling can be ruined by inadequate blast design and poor charging quality.

Today, all high-production underground operations use bulk explosives: ANFO, emulsions or water gels. To maximise the benefits of bulk materials, the charging processes must be properly mechanised. The equipment has to be safe and reliable, while meeting the highest possible productivity and quality requirements of the industry – whether for face charging with horizontal holes or for production charging with up-hand and / or down-hand holes.

Normet has designed a complete range of underground explosive chargers around these needs. Charmec products are the result of more than 40 years of accumulated experience and close partnerships with tunnelling and mining customers across the globe. Hundreds of these mobile units have already been delivered to hard rock mines and civil tunnelling projects worldwide.

In modern emulsion and water gel charging processes, the explosive is sensitised on the charging unit. As authorities usually regard such units as explosives factories, Normet has developed its charging concepts in close cooperation with explosives manufacturers.

Normet's Charmec systems are built to improve safety and productivity in underground blasting, while contributing to high quality and cost-effective bulk explosive charging processes. They also offer a consistently high resale value with low lifetime costs.

chargers designed around the needs of the industry.



CHARMEC MC 605 DA

PRODUCT RANGE:

ANFO PROCESS:

- > Charmec SF 405 / 505 / 605 DA
- > Charmec MF 605 DA
- > Charmec MC 605 series
- > Charmec LC 605 series
- > Charmec RM 125 T(V)
- > Charmec RM 905 series
- > Charmec RM 910 XCA

EMULSION PROCESS:

- > Charmec MC 605 D
- > Charmec LC 605 D
- > Charmec MF 605 D
- > Charmec LC 605 VE
- > Charmec SF 405 / 505 D



LIFTING & INSTALLATIONS

9

Lifting people and materials as safely as possible - a challenge we rise to.

LIFTING VEHICLES FOR OPTIMUM REACH

The Utilift scissor lifts on our well-known mining carrier are designed for lifting and installation work in mining and low-profile tunnelling. Utilift vehicles are suitable for roof reinforcement works, explosive charging and installation of cables, pipes and ventilation equipment. Typical standard options include a side-shift platform, platform tilt, crane, pipe installing equipment, air compressors, an electrically-driven power pack for platform hydraulics, ANFO charging kits and helper platforms. The driving ergonomics of the vehicle can be enhanced with an optional fully enclosed, high-comfort operator's cabin.

Our Himec range is the product of a long collaboration between Normet engineers and global tunnelling customers and experts. This has generated a holistic understanding of customers' lifting and installation equipment needs in both hard and soft rock environments.

With their wide reach, Himecs are ideal for medium- to heavy-duty load lifting and working range in practically any tunnel profile. A large variety of platform configurations and standard options allows them to be customized for specific lifting and installation applications. Our new platform load-sensing system and other built-in man-lifting safety features comply with the latest safety rules and regulations. Himec machines are also CE-approved and feature the well-known Normet mining carrier.

The Esslift is a mobile work platform designed with safety and work environment in mind. It is built on a truck chassis to have easily movable safe place for assembly work in tunnels and mines.

Lifting and working range in practically any tunnel and mining profile.



HIMEC RM 450

PRODUCT RANGE:

- > Utilift LF 540
- > Utilift MF 530
- > Utilift MF 540
- > Utilift SF 330
- > Himec MF 124
- > Himec MF 905
- > Himec SF 605
- > Himec RM 128 T
- > Himec RM 450
- > Himec RM 905 series
- > HIMEC RM 910 REX
- > HIMEC RM 915 A
- > Himec LF 905
- > Esslift series



SCALING

Scaling loose rock is an essential part of safe underground excavation. Manual scaling is unsafe, unproductive and uneconomical.

A PRODUCTIVE SCALER FAMILY

Mechanisation improves both the quality of scaling and the level of safety, productivity and effectiveness – not only of scaling works, but of the entire excavation process.

Normet offers a mobile mechanised scaling system: the Scamec 2000. This has evolved from successful scaler experience, hours of research and engineering work, and partnerships with mining and tunnelling customers around the world.

The Scamec 2000 scaler family comes in three interchangeable boom versions to provide optimum boom reach and coverage to fit the actual dimensions of the underground space. This reduces the need for repositioning, thereby minimising non-productive time.

Our Scamec range can be equipped with a hydraulic impact hammer for scaling in hard rock, or with a pick unit for primary scaling in soft and stratified rock and for secondary scaling in all underground excavations. All machines are easy to operate and provide high quality scaling for a safer work environment.

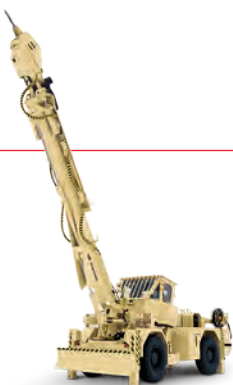
High quality scaling for a safer work environment and better rock support.



SCAMEC 2000 M

PRODUCT RANGE:

- > Scamec 2000 S
- > Scamec 2000 M
- > Scamec 2000 L
- > Scamec 2000 Breaker



UNDERGROUND LOGISTICS

11

High productivity in underground mines and tunnel excavations depends on timely and reliable transportation of a wide range of resources to work sites: men, explosives, fuel, oils, water, pipes, hoses, cables, rock bolts ...

VERSATILE UNDERGROUND VEHICLES

Normet provides you with a complete range of rubber tyred underground transport vehicles to fit all your needs. Designed for applications requiring full carrier utilisation, our Utimec range can be custom-built for any purpose, such as fuel transport, lubrication, mobile workshop, personnel transport, material transport, or as a flat bed with a crane.

Normet's modular Variomec system consists of an articulated carrier and interchangeable work modules for rock hauling, concrete transport and man lifting. Any configuration can be converted to another in just a couple of hours.

With one Variomec carrier and various modules, you can save capital costs for your fleet of tunnelling machinery and also maximise your equipment utilisation in rock and concrete transport and lifting and installation works.

Our Multimec slide-on / slide-off cassette system is the ideal solution for mines needing a quick change of use for a wide variety of transport requirements. It features a series of different cassettes that fit on the Multimec carrier, each for a specific purpose. Just one Multimec carrier and the right choice of cassettes gives you a safe and economical underground transport system for men, materials, fuel and so on.

*Underground transportation
designed for safety and comfort.*

UTIMEC MF 328 PER



UTIMEC LF 100 D



C490 FIRE CASSETTE



MULTIMEC MF 100

PRODUCT RANGE:

- > Utimec system
- > Variomec system
- > Multimec system



ROCK REINFORCEMENT

Our aim is to improve safety, increase productivity, save cost, time, and reduce risk in underground mining, tunnelling and the construction of underground spaces.

RELIABLE DYNAMIC ROCK REINFORCEMENT

Underground mining is moving deeper and the construction of tunnels and underground spaces is subject to more challenging ground conditions.

The risk of rock bursts and deformations is increasing, causing potentially unsafe conditions for people, equipment and the operation as a whole. Rock bursts and large rock deformations may also lead to closure of part or the entire mine or work site, consequently lowering revenues and impacting viability.

To manage these conditions, innovative and reliable rock reinforcement systems are critical to effective and modern underground operations. Such systems should not only be able to carry high loads, but also accommodate rock deformation by absorbing the energy released in the rock mass. Rock bolts are an essential part of these systems and have to be efficient and reliable, easily installed with standard equipment, and reduce the need for downstream rehabilitation.

Together with sprayed concrete, grouting and injection technologies and products, Normet offers the D-Bolt® system for active rock reinforcement.

The D-Bolt® represents a new generation energy-absorbing rock bolting system, specifically designed for efficient and reliable rock reinforcement in both squeezing and burst-prone strata conditions. The D-Bolt®'s patented technology is based on a smooth steel bar with a number of anchor points along its length. It is anchored in a borehole with either cementitious grout or resin. The D-Bolt® is only fixed with the grout in the anchor point positions, while the smooth sections between the anchor points can freely deform when subjected to rock dilation. The D-Bolt® absorbs the rock dilation energy through fully mobilising the strength and deformation capacities of the engineered bolt steel. The smooth sections of the D-Bolt® provide localised and independent reinforcement to the surrounding rock mass. This has the important advantage over end-anchored bolts, as failure of one section of the D-Bolt® does not destroy the reinforcement function of the other sections of the bolt.

The D-Bolt® is today used as an important rock reinforcement safety device at leading mines throughout the global mining community.

THE D-BOLT®:

- > Increases mine safety.
- > Eliminates or reduces the effects of rock bursts.
- > Optimises mine operations through reducing bolt failure.
- > Extends mine lifecycle through superior reinforcement of troubled rock.
- > Installs easily with standard equipment and can be used as a standard bolt in a one pass system.

SELF-DRILLING ANCHORS

In unconsolidated and fractured ground, boreholes may be difficult to keep open during traditional bolt installation. The Normet hollow steel self-drilling anchor (SDA) program offers a complete range of steel products that can overcome this problem and meet the increasing demand for safe and efficient solutions for drilling in such conditions.

We offer the following main, standard SDA types:

- > R25, R32, R38, R51.
- > T30, T40, T52, T73, T76 and T103
- > Versions with different wall-thicknesses/strengths are available.

The complete range is manufactured from high-quality steel and come with a complete range of accessories, including sacrificial drill bits for different rock conditions, nuts, face plates, couplings, centralisers, adapters etc.

The Normet SDA products find a wide range of application areas, including systematic radial bolting, face and slope stabilisation, spiling, micropiling.

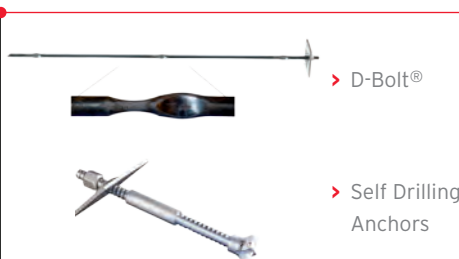
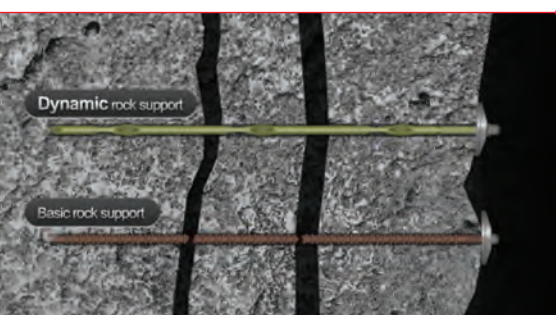
SELF-DRILLING ANCHORS:

- > Installation speed: Drilling, bolt installation and grouting all is done in a single, continuous operation.
- > Elimination of the need for borehole casing.
- > Easy installation in all direction, including vertically.
- > Suitable for installation in limited space, height and areas of difficult access.
- > Compatible with both cement grout and pumpable resin systems, including Normet's TamPur RBG resin.

For more details on the Normet Rock Reinforcement program, please see our technical data sheets.

PRODUCT RANGE:

- > D-Bolt®
- > Self Drilling Anchors



SURFACE SUPPORT LINER AND WATERPROOFING LINER

Bonded to concrete or to strata, polymeric liners are relatively new to the tunnelling and mining industry. With a typical applied thickness of 2 - 10 mm they can be applied with high output ranges providing not only a seamless water and gas barrier, but can often act as a first support liner. Normet is taking a leading role in offering a range of liners from long term durable flexible membranes to rigid, rapid setting structural support products.

FOR LONG TERM DURABLE FLEXIBLE WATERPROOFING LININGS IN COMPOSITE OR FINAL COATING, OUR OFFERINGS ARE:

> **TamSeal 800** - is a high performance, single component, spray applied membrane which offers tough but also highly flexible performance. It is typically applied with Normet's dry spray equipment achieving outstanding production rates of up to 200m²/h. Its outstanding adherence to both cured and freshly applied concrete of more than 1.2 MPa enables watertight composite shell structures by disabling water migration along the concrete-membrane interfaces with an operational life time expectancy of more than 120 years. Even when the concrete cracks, TamSeal 800 can easily bridge these defects up to 3 mm. It can be applied in different colours in a tunnel. Be it in a traditional umbrella waterproofing concept, a fully tanked tunnel or for waterproofing complex geometries like cross passages, TamSeal 800 is the right choice.

> **TamSeal 10F** - is a two-component, acrylic modified cementitious flexible waterproofing coating. It is the ideal product to waterproof and re-surface concrete or masonry. It can be mixed simply on site and creates an effective barrier against waterborne salts and atmospheric gases and provides a hardwearing waterproof membrane for roof and concrete protection.

> **TamSeal Drainage Fleece** - a lightweight double sided polyester needle felt with integrated polyethylene sheet is a supplementary product for use in locations that require pressure relief such as drained tunnel or can handle high water ingress locally.

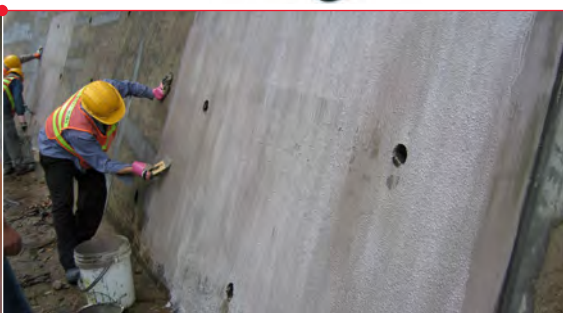
FOR IMMEDIATE SUPPORT OR IMMEDIATE SEALING AGAINST AIR OR HUMIDITY NORMET IS PROUD TO OFFER A UNIQUE PRODUCT:

> **TamCrete SSL (Structural Support Liner)** - is a non-cementitious acrylic polymer shell with sealant characteristics. It sets within minutes and reaches 80% of its final mechanical performance within those few minutes. It can be applied rapidly and safely, supporting the rock mass in the early ages, making this technology attractive for rock support on drives, shaft linings, undercutting of stopes, as well as an anti-oxidation barrier for quick re-entry areas. This technology is unlike any other current system available. It can be sprayed onto Kimberlite, dry / wet rock and concrete surfaces, and it can cure even under contact with live water. It is non-toxic and with very low dust production during application ensures a hygienic working environment. TamCrete SSL is typically applied with a 2 - 10 mm thickness minimising material requirement thereby creating savings in time, transport and labour.

TamCrete SSL can be hand sprayed using a Normet SSL15 pump, which is highly mobile and light or it can be applied robotically by linking to a high output SSL40 pump to a spray robot such as a Minimec.

TamCrete SSL can be used in conjunction with sprayed concrete, mesh and bolt ground support systems. It can be used to complement, strengthen or increase the durability of existing ground support systems.

MEYCO PICCOLA - DRY MIX SPRAYING PUMP



GROUND WATER CONTROL AND GROUND CONSOLIDATION

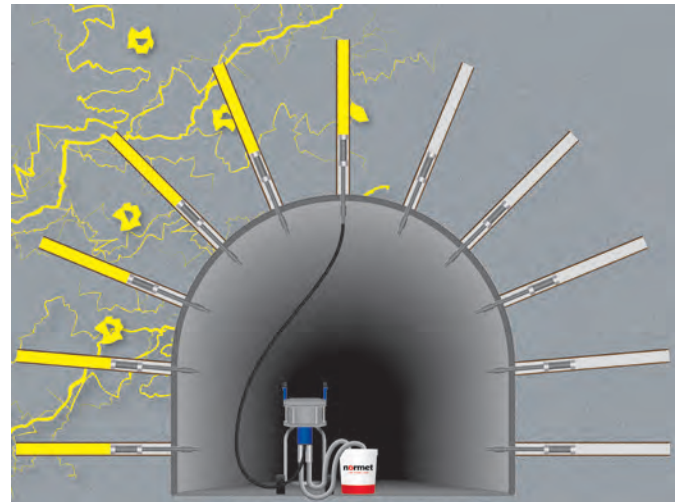
Normet is a leading manufacturer and supplier of chemical resins and grouts for ground consolidation, void filling and water ingress control used within the tunnelling, mining and general civil engineering environment.

The Normet portfolio of resins and grouts includes rigid, flexible, semi-flexible, water activated, temperature adjustable and low viscosity polyurethanes along with acrylic, colloidal silica and silicate based systems. To complement our resin and grout materials, Normet also supplies a full range of microfine and ultrafine cements used extensively in pre-injection (fissure grouting) and soil permeation grouting applications.

TYPICAL APPLICATIONS:

- > Stabilisation of rock, coal, soils and concrete materials
- > Stabilisation of convergence
- > Stabilisation of caved material
- > Control of water ingress
- > Pre injection into faulted zones or soils to secure before advancement
- > Primary and secondary support injection of any type of rock bolt, cable bolt, spiling bar or Irma bolt etc.
- > Anchoring and securing

In addition to our chemical resin and grout offering, Normet also supplies a full range of associated injection equipment including a comprehensive range of high and low pressure pumps, mechanical and inflatable packers, injection lances and cleaning solutions.



PRODUCT RANGE:

WATER CONTROL

- > TamPur 100
- > TamPur 125
- > TamPur 130
- > TamPur 150
- > TamPur 170
- > TamAcryl 2000
- > TamAcryl 3000

GROUND ENGINEERING

- > GeoTek HS
- > GeoTek CS
- > GeoTek SS
- > GeoTek MF
- > GeoTek VF
- > GeoTek AC
- > TamCrete MFC
- > TamCrete UFC
- > TamPur 117

ROCK SUPPORT

- > TamPur 116T
- > TamPur RBG
- > TamCrete MFC
- > TamCrete UFC



TBM tunnelling without chemicals is unthinkable. Normet provides efficient TBM additives combined with expert advice to fully support our customers.

To protect our environment in the best possible way, Normet TBM additives are very carefully developed with regards to their eco-compatibility and their use is thoroughly surveyed on site.

SPECIALITY CHEMICALS FOR TBM TUNNELLING

In TBM tunnelling, the soil conditioners allow to reduce cutterhead torque values and secure the complete filling of the working chamber independent of the present geological conditions; The gap at the shield tail end can only be securely sealed with the combined effect of brush seals and tail sealants; The main bearing can only be protected and lubricated with dedicated Main Bearing Sealants and Lubrication Greases.

Furthermore chemicals are used to simplify the use of annulus grouts, pre-injection can be used for soil stabilisation, start and reception shafts, safe havens, cross passages and many more applications.

New developments like sprayable waterproofing membranes or structural support liners (SSL) could only be developed with modern chemistry. These developments increase significantly the safety as well as decrease costs in difficult geometries like x-passages or L1-sections.

Normet TBM foams and Polymers increase the performance of the TBM, independent from the actual geological conditions and allows a safe & complete filling of the working chamber to ensure the correct EPB pressure.

Tail sealants keep the TBM tail shield watertight regardless of the outside pressure and main bearing greases protect and lubricate the main bearing - the most costly and sensitive part of the TBM.

TBM CORE PRODUCTS

Soil Conditioners

- TamSoil 190CF / 200CF standard foams
- TamSoil 260CF / 267CF polymerised foams
- TamSoil 280AC / 287AC foaming anti-clay agents
- TamSoil 300AC / 310AC non-foaming anti-clay agents
- TamSoil 600CP / 1000CP polymers

Anti-Dust and Anti-Wear Additives

- TamSoil 800AD foaming anti-dust agent
- TamSoil 860AW foaming anti-wear agent

Tail Sealants

- TamSeal TG11 / TG 21 / TG31 driving grades
- TamSeal TG12 first fill grade

Main Bearing Greases

- TamGrease BS1 main bearing sealing grease (excluder grease)
- TamGrease BL11 / BL12 EP2 grade lubricating greases

Annulus Grouts

- TamCem 8BFG / 9BFG stabiliser for 2k grouts
- TamCem 10SS accelerator for 2k grouts

Concrete Segments

- TamCem 67



LTC - LIFE TIME CARE

Our people, tools, services and training programmes take good care of your tunnelling and mining equipment and processes worldwide, maximising performance and safety with predictable cost.

LIFE TIME CARE SERVICES

We offer our customers a full range of Life Time Care services to keep their processes running smoothly. These encompass:

- > training services
- > training simulators for concrete spraying and scaling
- > audit services
- > maintenance and repairs
- > service contracts
- > documentation services
- > warranty services

LIFE TIME CARE PARTS

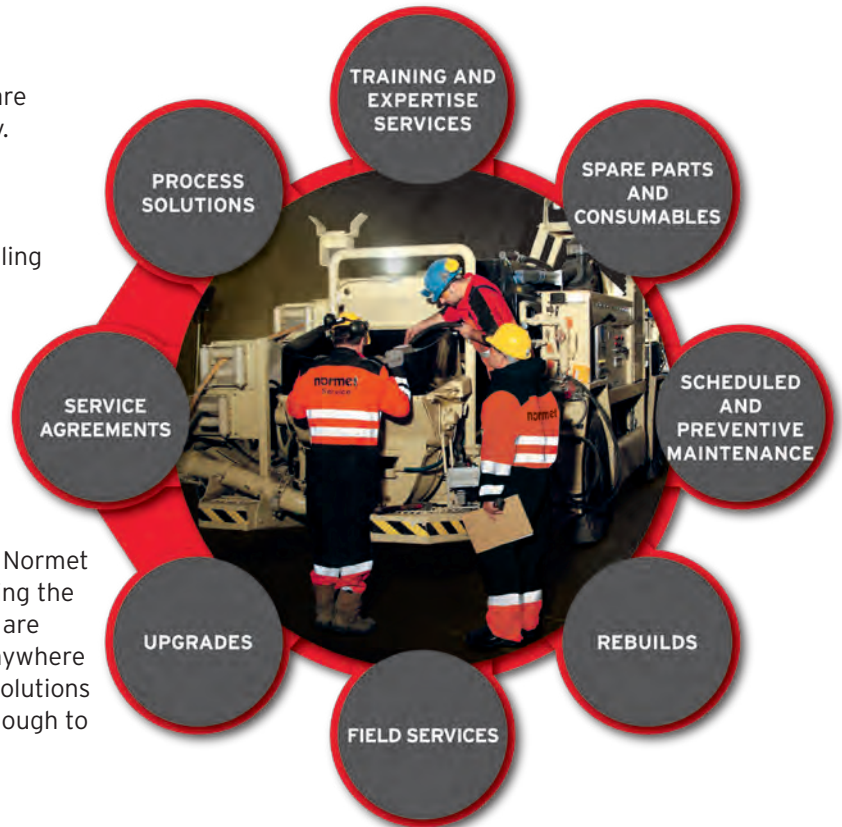
Replacing parts with genuine original, high quality Normet spare parts as machines wear is the key to extending the lifetime of your equipment. Normet parts services are committed to delivering new replacement parts anywhere in the world. We utilise the most modern logistics solutions to ensure that critical parts will always be close enough to prevent unnecessary downtime.

GLOBAL NETWORK

Normet's global network of local distribution centres supplies parts quickly and reliably. Services are available from 43 Normet locations in 28 countries and from our network of distributors. Our logistics partners take care of deliveries anywhere in the world.

SECOND LIFE - REBUILD

Rebuilding by Normet is the economical alternative to investing in new equipment. It gives you the reliability, performance and safety of a new machine, but with far lower investment costs. Our concepts and experience enable us to find the solution that best suits both your budget and needs.



LIFE TIME CARE UPGRADE PRODUCTS

Life Time Care products add value to customers' fleets and processes. They include features and components to upgrade and modify your underground vehicles, equipment and processes to the latest standards and your specific requirements so as to ensure productivity, profitability and safety.



Normet Rental offers equipment rental and financing for customers.

RENTING FROM NORMET RENTAL

Normet Rental serves the needs of underground mining customers, tunnelling contractors and plant hire companies. Demand for equipment rental and customer financing is steadily growing in the mining and construction machinery market because of:

- > increased competition for contracts
- > the size and splitting of projects
- > unpredictable market changes that cause fluctuations in customers' fleet utilisation rates

Rental allows customers to reduce their own fleets and avoid fleet investments. As the capital cost of a rental machine is spread evenly from beginning to end of a project, rental helps to minimise the risks of fleet ownership. An integral part of the rental contract is a service contract, which lowers maintenance and repair costs.

Our fleet of rental equipment is being progressively expanded with new products as rental activity in the market grows. Normet Rental also offers financing solutions tailored to the needs of customers' construction projects, such as hire purchase and leasing options.

Rental minimises fleet ownership risks and provides the right equipment just in time for your needs.

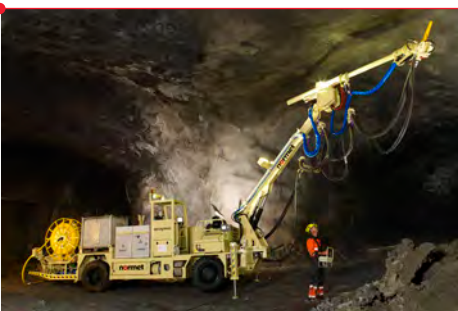


CUSTOMER BENEFITS

- > Lower capital investments
- > Fleet reduction
- > Minimised risks

NORMET RENTAL OFFERS EQUIPMENT FOR:

- > Man lifting and installation work
- > Explosive charging
- > Concrete spraying
- > Concrete transport
- > Transportation



GLOBAL PRESENCE / LOCAL SUPPORT

NORMET AMERICAS
SALT LAKE CITY, UT (USA)

NORMET INTERNATIONAL
HÜNENBERG (SWITZERLAND)

NORMET
IISALMI (FINLAND)

NORMET CHILE
SANTIAGO (CHILE)

NORMET SINGAPORE
SINGAPORE

NORMET ASIA-PACIFIC
ADELAIDE

NORTH AMERICA
Canada
Mexico
USA

SOUTH AMERICA
Brazil
Chile
Colombia
Peru

EUROPE
Finland
France
Norway
Russia
Sweden
Switzerland
United Kingdom

AFRICA
South Africa
Zambia

ASIA
China
Hong Kong
India
Indonesia
Kazakhstan
Mongolia
Qatar

Russia
Singapore
Taiwan
Uzbekistan

AUSTRALASIA
Australia
New Zealand

For more information, please contact your local Normet representative,
visit www.normet.com for contact details.





MANY REASONS FOR NORMET TUNNELLING AND MINING EXPERTISE ALTOGETHER... BETTER THAN EVER



www.normet.com

Subject to technical and design modifications without notice. Technical properties have been achieved under theoretical and normal conditions. Please consult the respective machine manual for all matters related to safety, operation and maintenance.