

# CONSTRUCTION CHEMICALS

Mining | Tunnelling | Rehabilitation & Maintenance  
Ground Engineering | Readymix & Precast | Watertight Structures



# Our Unique Solutions

**Normet strive to provide you complete underground construction and mining technical solutions that create maximum value, through saving costs and shortening the process cycle time in a way that also improves safety, and reduces uncertainty. From production all the way through to application, our solutions are fundamentally developed on the welfare of people and on the care of the environment.**

To do this, Normet encourages a strong partnership with you from the beginning to understand your issues, and then evaluate how to attain the highest benefit for you. Our approach is centred on packaging technical solutions comprising a range of tough underground construction equipment, high performance construction chemicals, and delivering it through the most competent and attentive technical support team in the business.



Normet is a Finnish based company that operates on a global basis with over 37 locations in 24 countries worldwide. This spread allows us to respond rapidly and reliably to all of your technical needs, whenever and wherever in the world you may be.

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 the miners and operatives in their daily work. Our research and development ethos is to promote increasingly safer and environmentally sound construction chemical solutions.

The range of Normet construction chemical solutions we offer are focused entirely on underground construction and mining. Our solutions are appropriate from the beginning of projects, such as with ground treatment of fissured rock or soils, construction of deep box structures, through to tunnel or mine support with sprayed concrete or TBM driven tunnels, to finally maintaining and extending the service life of underground structures.

*Normet is truly unique in our ability to offer you this complete solution.*

**Being a Finnish based company, the Normet way of working globally is to employ attentive, quietly confident professionals to our company, who have strong team ethics that encourage long lasting partnerships both in their teams, but also importantly with you, the customer.**

The key steps we go through for your success are based on the following pathway:

➤ **Listening and understanding your needs**

“Getting it right first time” is at the heart of our first meetings. Our experienced team come from contracting and mining backgrounds and understand your processes and needs. By actively listening to your issues and what you strive for, our team are in a great position to help and deliver a solution with you.

➤ **Solution approaches**

Often the key driver for project savings and improved safety is doing things more efficiently. With our team’s international experience from numerous projects, we can offer best practice solutions to you, with established benefits. Our solutions don’t stop at products, but provide for full site support, the right underground equipment, logistics and training.

➤ **Site support and training**

Our technical support is formed of experienced professionals that support you on site from the onset of site trials, through testing, and for the required training of your team, for example with our EFNARC Sprayed Concrete qualified team. Our teams also support your design development with full technical details and specifications customised to your projects.

Normet also provides you with most competent team of global experts which we refer to as our “Flying Engineers” who can support you with more technically challenging issues where and when you need them.

➤ **Audit and improvement**

As with all processes, be it in tunnelling, mining or ground engineering projects, in order to maintain you at the leading edge, our Normet team provide you assessment and audits by our experienced engineers to establish and implement improvements. We are also delighted when you feed back to us how we or our solutions can improve too.



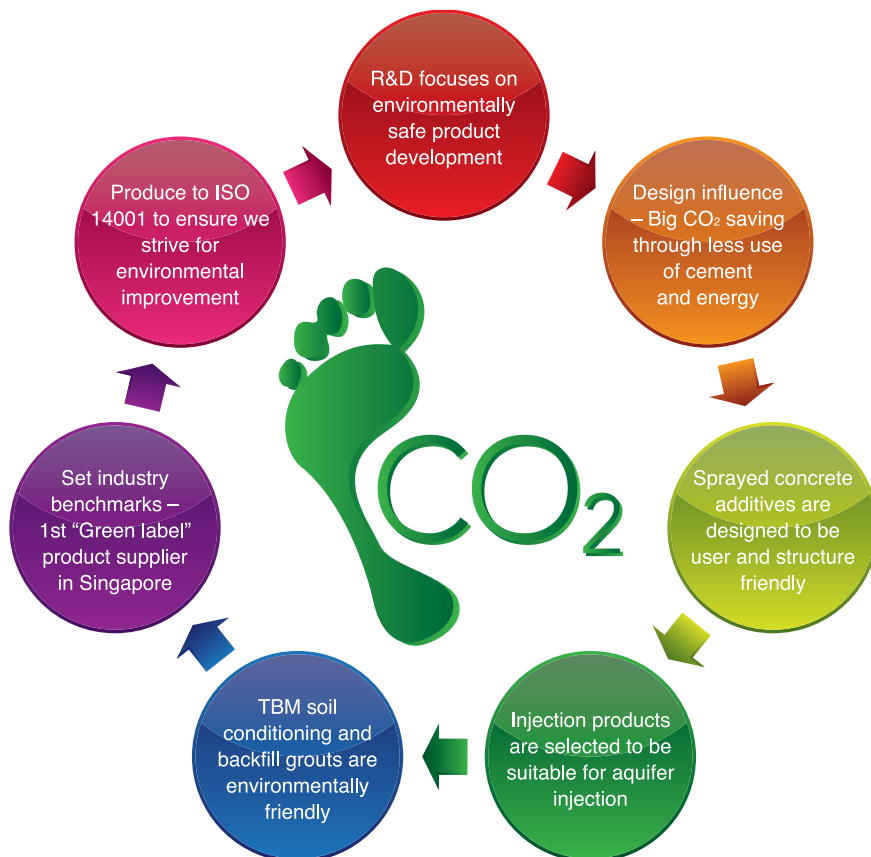
# Taking Care of You

## ➤ Lightening our environmental footprints

Normet's quest to further reduce our environmental footprint has a holistic approach. This means in our laboratories we focus on environmentally sound and occupationally healthy formulations, and combined with our underground construction experience, can determine the most effective and safe way to apply these product solutions.

Normet's production facilities are beginning to manufacture in alignment with ISO 14001 and 9001 which ensures we continually improve in terms of quality and environmental sustainability.

Our quest leads us to work with you and design teams on establishing best practice in underground construction and mining to ensure the right products for the best technical performance and lowest environmental impact are established for the outset. In some instances, the significant reduction in the amount of concrete used on a project can have considerable CO<sub>2</sub> savings due to the reduced cement usage.



*We can always do better, but our ethos to lighten the footprints we leave on Earth is deeply rooted in all that we do for you.*

We are working to be the “best in class” with respect to the environment. In some parts of the world we have already established this best practice, such as with the occupational health and safety risk assessments with spray applied waterproofing membranes for tunnels, and being the first company to establish “Green Label” products in Singapore.



**Normet is a long established global partner to mining companies and contractors, providing the industry since 1962 a range of specialised underground equipment. This range has included underground logistics equipment, scalers, working platforms and mobile sprayed concrete machines.**

**Normet now offers the full package of solutions for modern ground support with construction chemicals for sprayed concrete, injection systems for rock improvement and coal seam stabilisation, and more recently, reinforcement systems for high deformation conditions.**

Our sprayed concrete systems are formulated to bring high early strength gain to optimise early re-entry to the mining area, promoting faster cycle times and long term stability. We provide solutions for wet-mix sprayed concrete that is environmentally safe, and can replace standard mesh solutions through addition of either steel or structural polymer fibres.

The use of injection in hard rock mines is rapidly growing, especially for block cave mine operations with heavily fractured ground. The use of injection resins for ground consolidation is an alternative solution compared to the traditional method of using sprayed concrete, mesh and rock bolts. Normet offer both foaming and non-foaming injection resins for stabilisation of coal and soft and hard rock strata to increase the efficiency and safety of the extraction process.

Normet's D-Bolt is a state-of-the-art smooth bolt with multiple anchors along its stem, specifically designed for difficult ground such as squeezing conditions or susceptibility to dynamic seismic events. It is a fully grouted bolt, using cementitious or resin based materials, and provides excellent reinforcement characteristics either stand-alone or, more importantly, as part of a ground support system with sprayed concrete.



Picture supplied by Strata Consolidation



**Normet understands that high productivity and safety are the main priorities associated with tunnelling projects. With this in mind we have developed a range of tunnelling systems where high output can be achieved without sacrificing well-being. Normet Construction Chemicals offers solutions to support the Tunnel Boring Machine (TBM), drill and blast, and mechanical excavation methods of tunnelling and suit all rock and soil types.**

Flooding and collapse can have catastrophic consequences to project cost, the environment and safety of workers. We have developed a range of pre and post injection technologies including microfine cements, acrylics gels, acrylic grouts and polyurethanes to prevent water ingress and to consolidate weak and fractured rock and soil geologies.

In keeping with major advancements in sprayed concrete technologies we have developed state-of-the-art high performance water reducing admixture systems, hydration control admixtures, hyper plasticisers and high performance alkali free set accelerators. Normet can supply a full range of equipment and construction chemicals to handle any tunnelling project, both large and small, and can support you through on-site training and application methods for both the machinery and chemistry.

Having a watertight structure is a main factor in creating a successful and reliable tunnel in both the long and short term which is why we have created a range of robotic and manually applied waterproofing systems for tunnels. The use of spray applied waterproofing membrane offers a fast and efficient system with logistical and cost benefits over traditional waterproofing technologies. Our TamSeal 800 is a high performance, single component, spray applied tough but flexible waterproofing membrane.

With the constant improvements in Tunnel Boring Machine (TBM) technology, together with an ever growing demand for higher TBM production and output capabilities, there is a strong requirement for improved admixture and material technology to support and enhance these increased advance rates. With this in mind, we are constantly improving and adding products to our TBM technology range, covering hard rock, EPB, open face and slurry type machines. Our main solutions cover tail shield sealant greases, soil condition foams and polymers, and backfill grouts.





**Normet offer a complete range of materials for the civil construction, underground construction and general building sectors. For over 30 years the TAM brand has been prolonging the operational 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.**

Throughout the world Normet have testing capabilities and experts that constantly develop the TAM range ensuring the products are up-to-date with the latest systems, and enhancing safety and lowering environmental impacts.

Our high build concrete repair materials have been designed to achieve maximum build thickness with low shrinkage and excellent compressive strength values.

The TamRez range of epoxy injection resins can be used for structural repair to cracked concrete and delaminated renders and screeds. Our high performance polymer enhanced joint compound come pre-packed in an easy to use format for mixing and applying.

The market leading TamPur polyurethanes are mainly used to control the ingress of water on aging infrastructure projects, such as tunnels and bridges. With a full selection of polyurethane resins in the TamPur range there will be a suitable resin for the majority of those unexpected water ingress issues that can occur.

Normet offer a 'one stop shop' service in which they have a range of specialist pumps, packers and accessories that are specially sourced to suit the application of the TAM range.

Typical application for our diverse range of rehabilitation and maintenance solutions include:

- Beams and soffits
- Cracked concrete
- Waterproof render to brick wall and block work
- Delaminated grout beds
- Bearing pads
- Water containment
- Pre-cast members
- Columns and beams
- Joint reinstatement
- Bolt grouting
- Duct sealing
- Leak sealing
- Void filling



# Ground Engineering



**Normet has been actively involved in ground engineering works worldwide for over 30 years, both manufacturing and supplying specialist chemical resins and grout to the mining, building and civil engineering industry. During this time, Normet have continued to develop materials and methodologies to suit a wide variety of applications for fissure grouting, permeation grouting, void filling, underpinning and slab jacking using the GeoTek range of resins and grouts.**

The Tam GeoTek materials make use of modern innovative technology with resin and grout compounds that have been specifically formulated for the needs our industry, and can be used in all types of ground treatment ranging from sands and gravels, peat, all the way to fissured and fractured hard rock conditions. Our systems are focused on efficiently delivering high end technical performance whilst reducing the environmental impact.

Our market leading position has been built on expertise and knowledge of the chemistry, and how this can be best utilised in the mining, building and civil engineering world. Today we bring all that accumulated knowledge to our customer's projects by offering market leading products, technical service and support including full technical on-site consulting, training and assistance.





# Readymix & Precast



**Our state-of-the-art concrete admixtures technology enhances concrete placing efficiency, reduces energy and optimises overall concrete performance.**

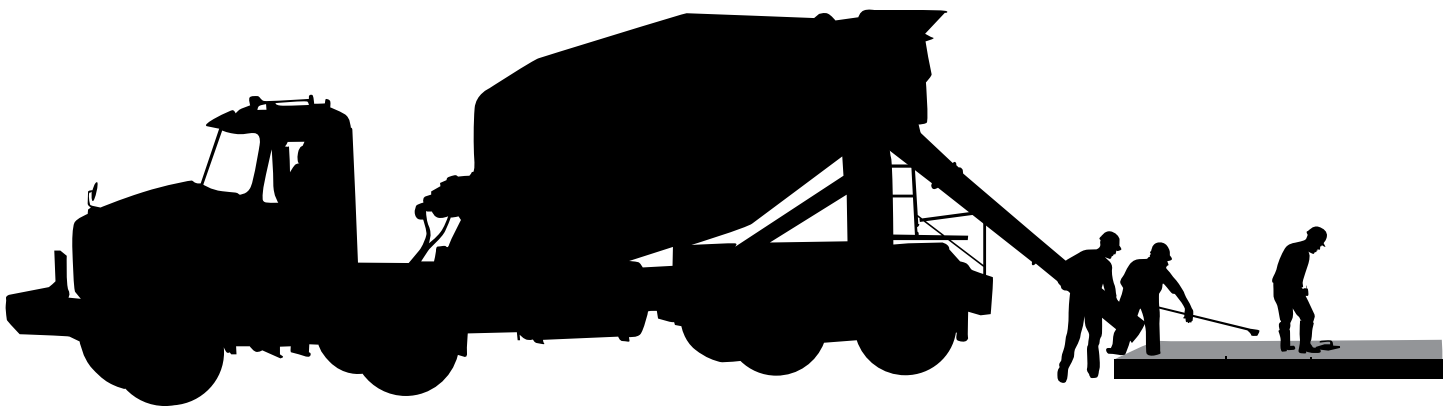
We manufacture a complete range of admixtures for all types and grades of pumped, poured and sprayed concrete.

Our portfolio of admixtures includes high range water reducers, plasticisers and state-of-the-art superplasticisers where long-term durability and ultra-high early and ultimate strengths are required, as well as a wide range of specialty admixtures.

Our unique TamCem admixtures extend the working time of concrete and enhance the surface finish.

Our TamCem HCA is a special hydration control admixture for extending the working time of cast and sprayed concrete applications.

The admixture range also offers the pre-cast industry a solution for high early strengths that allow faster de-moulding of forms for higher productivity and less damage to cast items.



# Watertight Structures



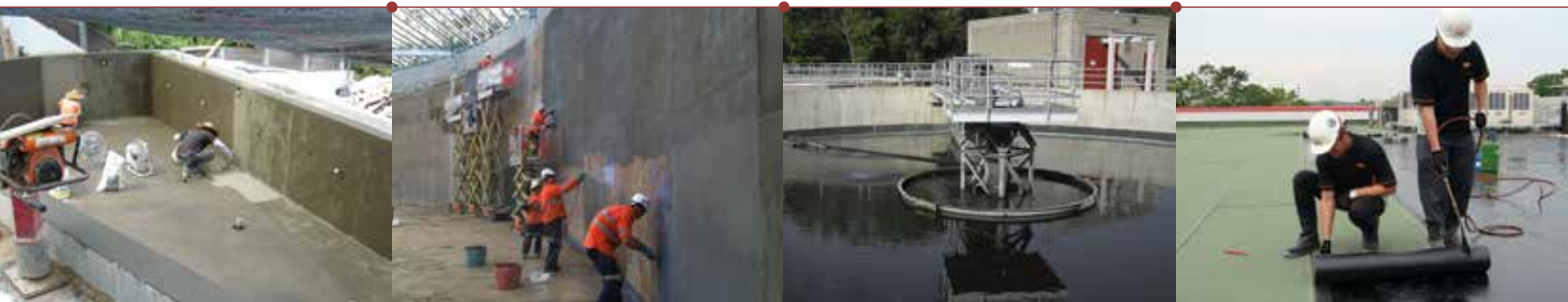
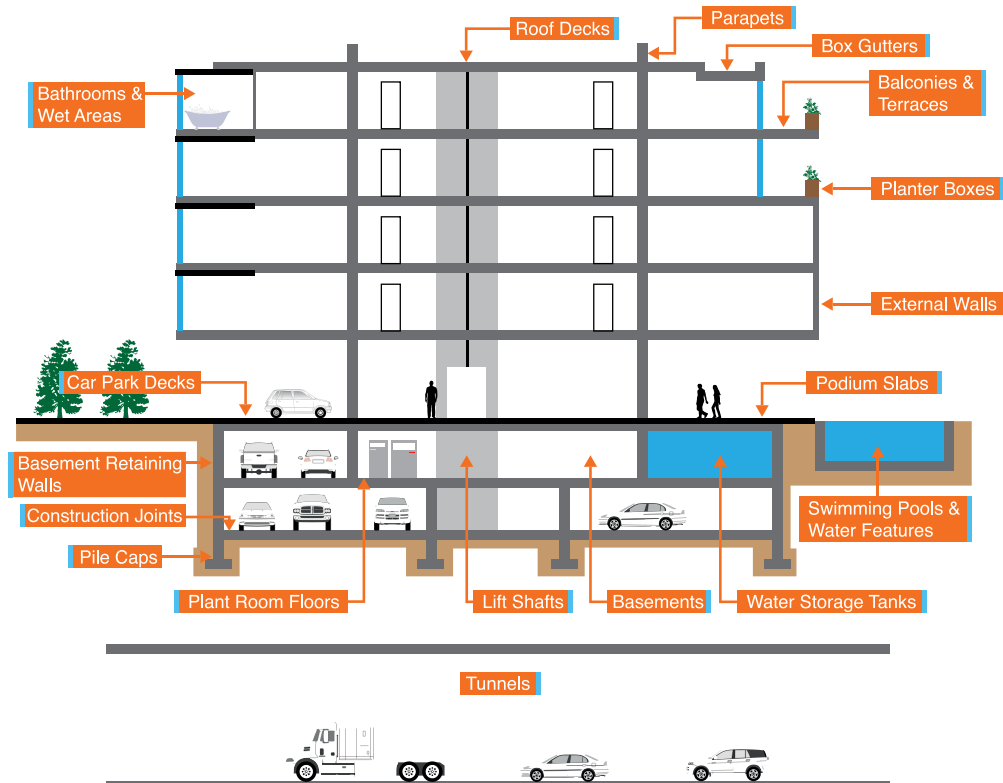
We offer a package of watertight solutions guaranteed to waterproof all types of structures, foundations and tunnels, including integral treatment products, construction and movement joint systems, surface-applied penetrative treatment, liquid-applied coatings, sheet membranes and water plug products.

Our Watertight Structure products include the TamSeal and TamSil range of coatings and liquid applied impregnating systems.

Our TamSeal 20, DS and Admix materials react to form an insoluble crystal matrix within the pore and micro crack structure of the concrete or mortar. These materials provide an in-depth or integral waterproofing function that is permanent, effective and easy to use. Our polymer enhanced waterproof coating materials are pre-packed, efficient technologies designed for use in a variety of applications including water retaining structures, podium decks, lift pits, pools, roofs, etc.

TamSeal protects concrete against carbonation and chloride attack, as well as seawater, wastewater and aggressive ground water.

TamSil materials are ultra-low viscosity impregnating systems providing in-depth waterproofing for bridge structures, rooftops, airport runways and water retaining structures. TamSil materials are transparent, chemically reactive systems providing long-term waterproofing protection.

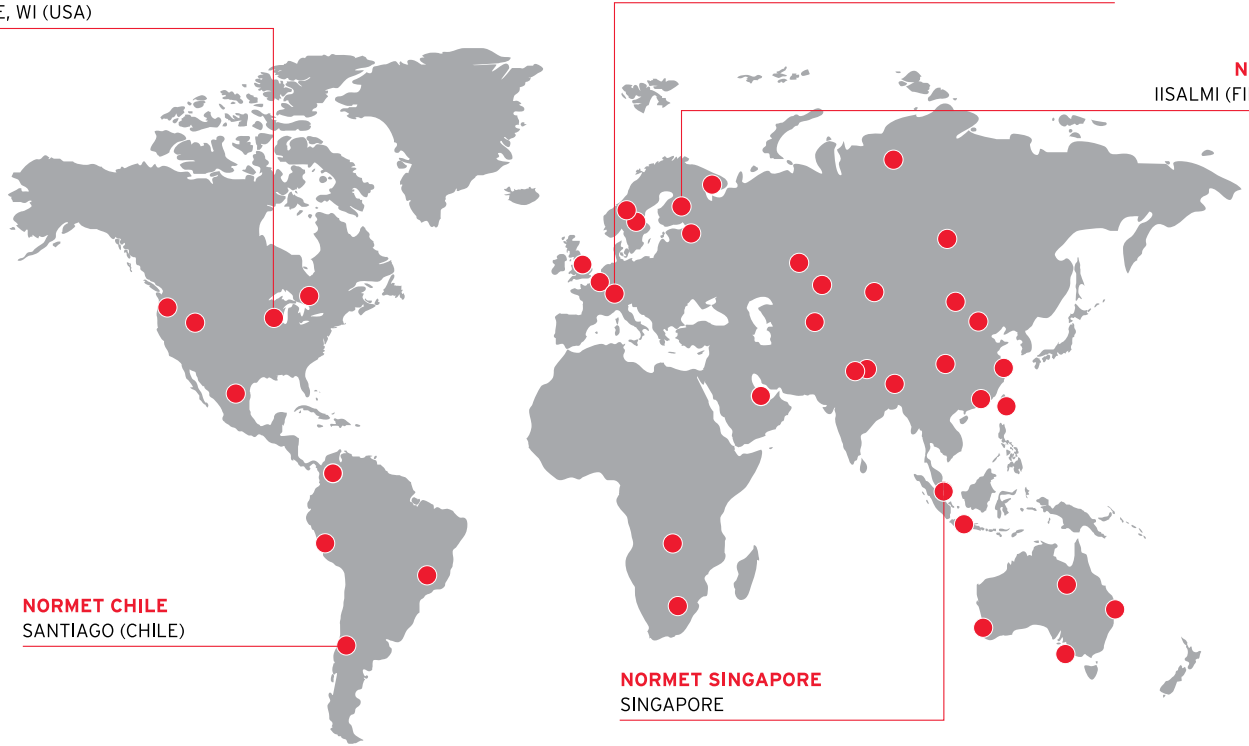


# Global Presence / Local Support

**NORMET AMERICAS**  
UNION GROVE, WI (USA)

**NORMET INTERNATIONAL**  
HÜNENBERG (SWITZERLAND)

**NORMET**  
IISALMI (FINLAND)



**NORMET CHILE**  
SANTIAGO (CHILE)

**NORMET SINGAPORE**  
SINGAPORE

**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

For more information, please contact your local Normet representative, visit [www.normet.com](http://www.normet.com) for contact details.

**NORMET CONSTRUCTION CHEMICALS BROCHURES**

➤ CONSTRUCTION CHEMICALS

MINING

TUNNELLING

REHABILITATION & MAINTENANCE

GROUND ENGINEERING

READYMIX & PRECAST

WATERTIGHT STRUCTURES

