



Railways Applications

Sustainable support for your ground

About Us



Welcome to Nordic Geo Support

THE FUTURE
IN GEOTECHNICAL
SOLUTIONS



- Originating from the Nordics with a global footprint
- Leveraging local and global experience to offer customers sustainable solutions
- Working with selected partners to bring a customer-centred focus to business operations

We focus on the following sectors:

Drilling
Mining
Tunnelling
Construction
Infrastructure (road, rail, airport and sea ports)
Building repair

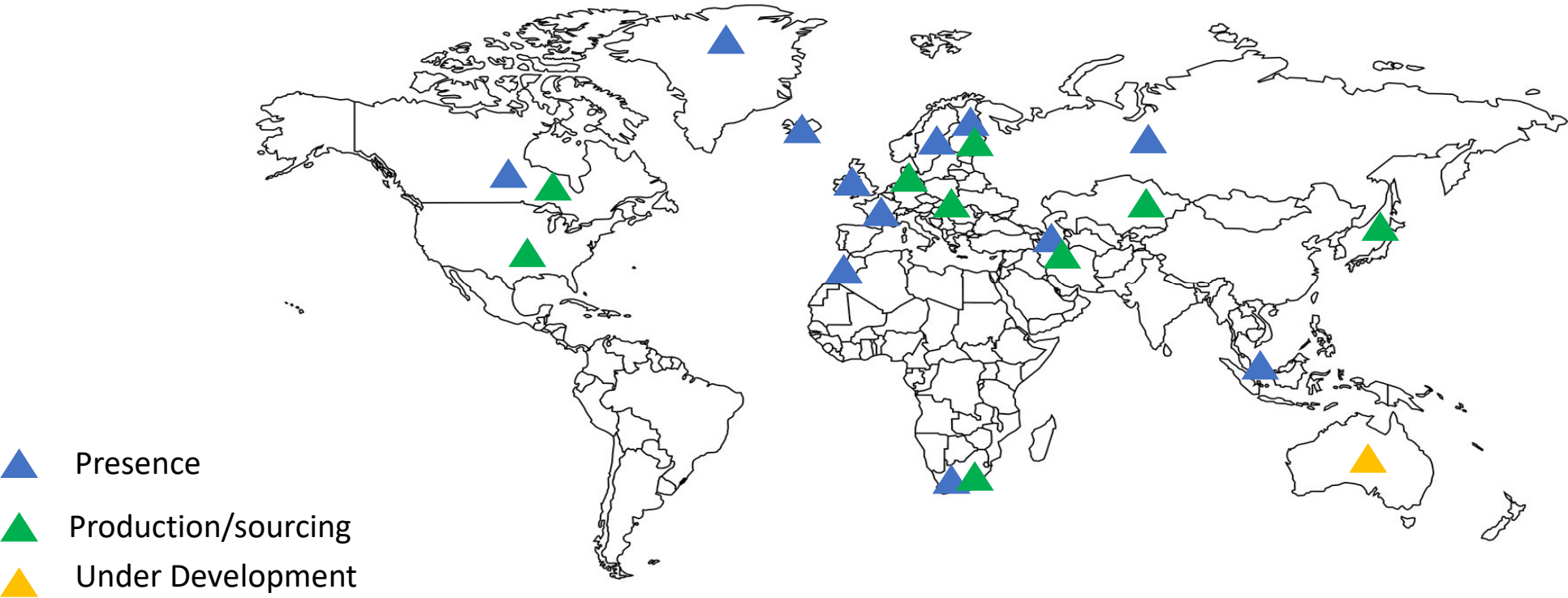
- Our products are application driven and are easily combined to create solutions for everyday problems
- Our people are empowered to make decisions, we there to help you and your business be successful

Overview

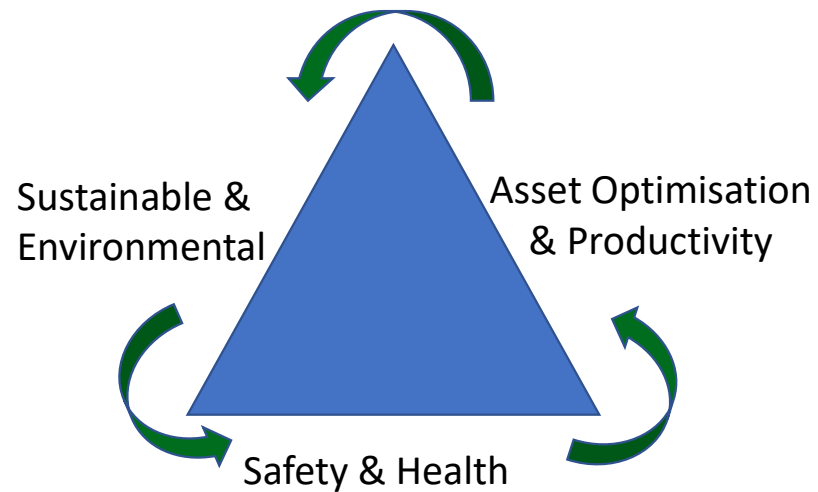


Our offer <ul style="list-style-type: none">Leading technology solutionsFocus On SustainabilityComplete solutionsBranded products under Nordic Geo Support	Our customers: <ul style="list-style-type: none">Mining (surface & underground)TunnellingBlasting and energy drillersConstruction civil (bridge, road...)Construction repair (infrastructure and buildings)
Our Values <ul style="list-style-type: none">Customer centricEquality in all aspectsRespect to people and the environmentEach person in the company is empowered and takes ownershipCollaboration and cooperationTeam spirit	Our reach today <ul style="list-style-type: none">Nordic region as coreBalticsEurope (focus southern Europe & UK)Africa (Northern and Sub Saharan)TurkeyCanadaAustralia and SEA

Today's Footprint



Reducing Project Impacts



Sustainability & Environmental: Solutions that drastically reduce CO₂ emissions in manufacture and transport and energy usage as well as solutions offering longer life cycles and reusability.

Asset Optimisation & Productivity: Solutions that are faster, more efficient, easier to use and reusable, optimising advance rates and ore recovery as well as reducing maintenance costs.

Safety & Health: Solutions that remove humans and equipment from unsecured ground, faster ground securing, stability and consolidation reduce manual operations and weight capacities

Asset Repair and Rehabilitation



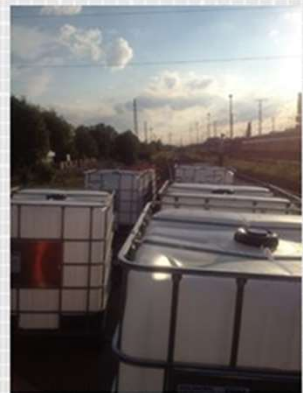
Railway and Foundation Support



- ✓ Manage high speed joints
- ✓ Tunnel and bridge transition areas
- ✓ Ballast consolidation
- ✓ Rail foundation solutions

Sealing
Stabilising
Consolidating

Methacrylate Gels – Ground consolidation



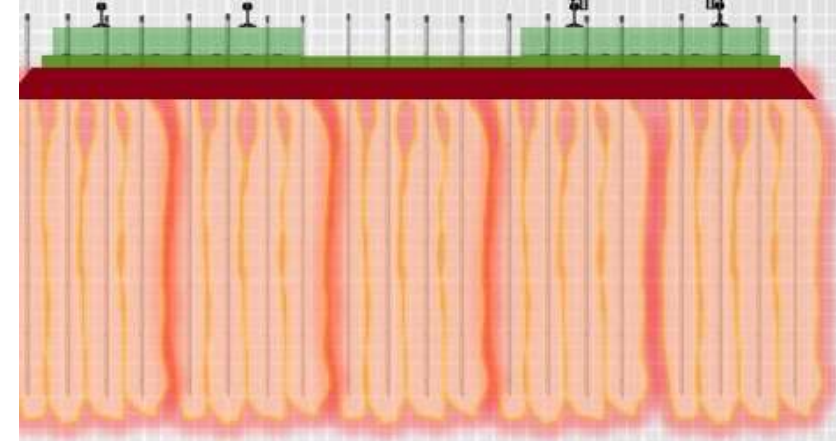
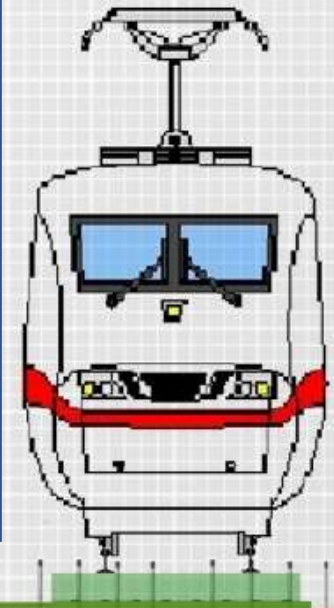
- Penetration in very fine soil
- Fast reaction
- High mechanical strength also in saturated medium
- Waterproofing and heavy duty consolidation



High Speed Rail Hamburg-Berlin

Railways require higher mechanical strength due to load capacities

Alternate ballasting systems also require specific resins for vibration or bonding purposes



Railway Ballast Bonding



Ballast Bonding Technologies reduce track maintenance and improve load bearing capabilities.

Silicate based resins are designed for use in these applications.



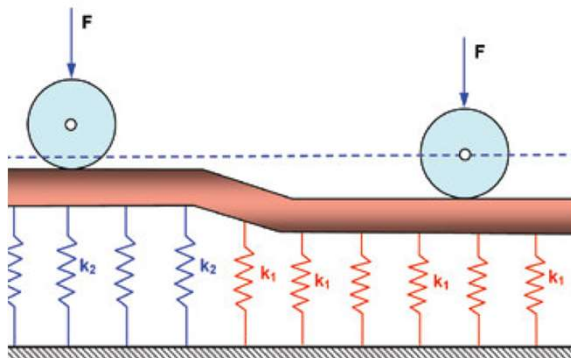
Stabilised ballast bed on a viaduct under construction using ballast bonding (Liege, Belgium).

Transition Sections - Bonding



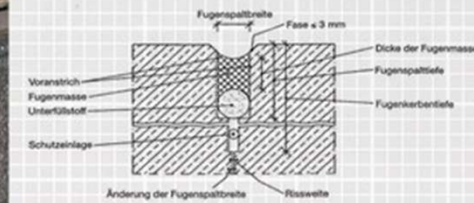
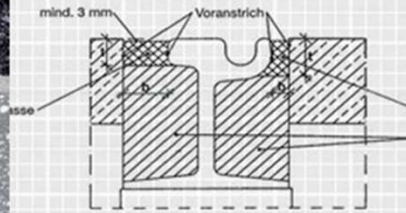
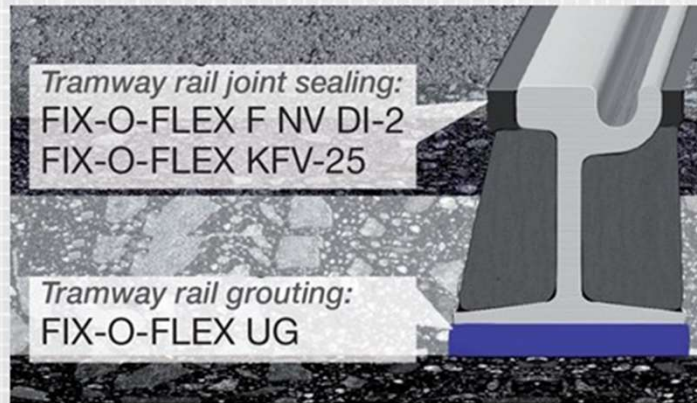
One of the most important areas of application of ballast bonding technology is construction of transition areas between track sections alternating from ballasted track to rigid trackway.

Vehicle transition from a section of ballasted track to a section of rigid trackway with significantly less elasticity, results in vibration amplification of the bogie and the chassis due to sudden change in elasticity (stiffness).



Depending on the axial load this leads to negative effects not only on the vehicle but on the track structure as well. Mentioned phenomena leads to track sinking and accelerated degradation.

Tram and rail joints



Fix-O-Flex F NV / KVV-25 / UG as joint sealing in road building



Crack Sealing Applications



Bridges and Masonry Repairs



Sealing
Consolidation
Filling
Rendering



1C and 2C PUR Resins
Silicate Resins
Methacrylate Gels
Epoxies



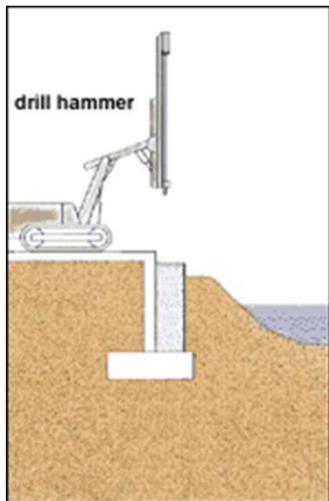


Mechanical Support in soft ground

Micropiling systems
Glass Fibre Reinforcement for
Inert applications



Micropiling for Track Bed Support



Under track bed support
Slope stabilisation
Erosion control

The load transfer (from micro-pile into the ground) happens via „skin friction“. Value of skin friction reflects natural composition of soil. To get higher capacity of micro-piles (if even requested) is possible through change of the length and of the size of grout-body (higher pressure of injection + size of drill bit).

Further Detailed information on NordicSDA and applications is available on request.



Construction & Infrastructure Sectors

Nordic Geo Support Offers complete sustainable solutions for the construction and infrastructure sectors. From new projects to repair and rehabilitation work, our focus is to help deliver the lowest environmental footprint and a sustainable long term asset. Our capabilities include but are not limited to the following table:

	Infrastructure	Geotechnical	Tunnels	Residential & Commercial	Repair and Rehabilitation
Segments	Road Rail Airports Ports Dams Drinking water security Sewer Renewable Electricity Energy & Water Well Drilling Tower construction Other pipe lines Pipes	Slope Stabilisation Foundation Erosion Investigation Drilling	Drill & Blast TBM Micro Tunnelling	High Rise Housing Basements Carparks	Infrastructure Geotechnical Tunnels Residential Commercial
Typical works	Ground Support Ground consolidation Water sealing & management Dewatering Advancement Technologies Project Ventilation	Ground Support Ground consolidation Water sealing & management Dewatering	Ground Support Ground consolidation Water sealing & management Dewatering Advancement Technologies Project Ventilation	Ground Support Ground consolidation Water sealing & management Dewatering	Ground Support Ground consolidation Water sealing & management Dewatering Advancement Technologies Project Ventilation

Product range

Drilling Consumables

High Performance rock drilling tools and consumables:

- DTH Hammers
- Bits
- Shanks
- Rods
- Drill Pipes
- Adapters
- Augers, Accessories

Injection Grouts

Leading edge resin injection technology for demanding cases:

- Water Stopping
- Sealing
- Ground Consolidation
- Ground Stabilisation
- Construction and structural repairs

Anchoring & Bolting Grouts

Grouting technologies offering ease of use, clean and fast setting:

- Capsules
- Cartridges
- Pumpable grouts
- Additives

Anchoring & Bolting

A broad range of rock bolting and anchoring technologies:

- Double and single coated protected steel
- Steel Self Drilling Anchors
- GFRP bolrs of all types
- Standard bolts and meshes

Cement-Based Additives

Cement based admixtures and additives:

- Concrete Repair
- Admixtures
- Modifiers
- Waterproofing
- Joint Sealants

Pumps & Accessories

Cement and resin mixing and pumping technologies:

- Cement Pumps
- Resin Pumps
- Transfer systems
- Dataloggers
- Hoses, lances, packers

Water control

Waterproofing, drainage and pumping:

- TunnelDrain innovative strip drainage system
- Drainage pipes
- Waterproofing grouts, additives and sealants
- A broad range of dewatering pumps

Ventilation

Air quality, ventilation and safety solutions:

- Ventilation bags and systems, including Mecanicad's rigid ducts
- Fans & inline coolers
- Water atomisers

Re-usable Hangers

Developed in the Nordics, fast, easy to use & reuse:

- Services Hooks for ventilation systems, water and pneumatic lines, electrical cables and distribution boards
- Blasting hooks

Other products

A range of other products:

- Coatings & sealants
- Personal protective products
- Mining accessories