

# NORDIC GEO SUPPORT Resin Injection Systems

AND SEALING SOLUTIONS







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NORDIC GEO SUPPORT offers a comprehensive range of Resin Based Solutions to mining, tunnelling, energy, construction and geotechnical applications. Working with leading certified suppliers in combination with experienced manufacturers that are employing leading edge, innovative production facilities. We offer the highest certified solutions in the industry today including benchmark CE certifications (CE-marking in accordance with EN 1504-5), Ground Water, Drinking Water, Environmental and other certifications and testing for our products suitable to your project challenges.

## **Nordic Geo Support Solutions**

### Drilling Consumables

High Performance rock drilling tools and consumables:

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

## Pumps & Accessories

Cement and resin mixing and pumping technologies:

- Cement Pumps
- Resin Pumps
- Transfer systemsDataloggers
- Hoses, lances, packers

### 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

## Water control

Waterproofing, drainage and numping:

- 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



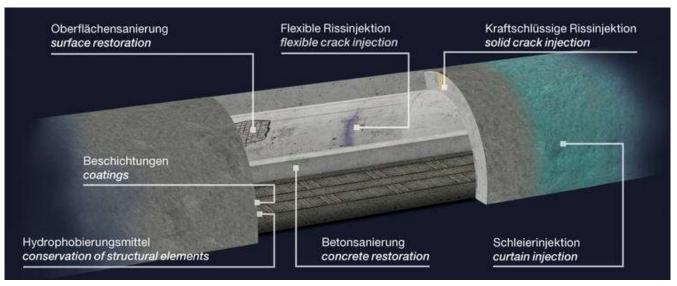
## NordicPUR 1C Polyurethane Resins Overview Fast, simple to apply single component resins. No mixing.

Resins	Description	Typical Applications
NordicPUR Ultra Fine	Water-reactive, One-Component polyurethane used for deep injection  ✓ solvent-free ✓ CFC-free ✓ Accelerator for adapting reaction speed	For grouting applications including:  Fine to very fine soils  Hair-line cracks  Water-carrying sands/soils  Porous materials  Stabilisation and sealing of loose rock  Stopping water inflow (including salt water)  Injecting of man-accessible sewer lines, pipeline and tubes  Securing of anchors
NordicPUR Micro Fine	Water-reactive, One-Component polyurethane  ✓ solvent-free ✓ CFC-free ✓ Accelerator for adapting reaction speed	For grouting applications including:  Fine to medium-fine sands, soils and gravels Injection of cracks Stabilisation and sealing in rock and gravel Stopping water inflow (including salt water) Injection into honeycombed rock formations Injecting of man-accessible sewer lines, pipeline and tubes. Securing of anchors
NordicPUR Crack Seal	Water-reactive, One-Component polyurethane  ✓ solvent-free  ✓ CFC-free  ✓ Accelerator for adapting reaction speed.	For grouting applications including:  Gravels, loose and fractured rock  Medium-fine to larger cracks, fissures and honeycombs  Stopping water inflow (including salt water)  Sealing of loose rock  Sealing of cracks and expansion joints in bridges and concrete structures  Grouting of man-accessible sewer lines, pipeline and tubes  Where high elasticity and flexibility is required
NordicPUR Rock Seal	Water-reactive, high foaming One-Component polyurethane system with an integrated catalyst	For grouting applications including:  Stopping of flowing water Restoration of concrete structures Cavities
NordicPUR Foam DW	Water-reactive, high foaming One-Component polyurethane system with an integrated catalyst  ✓ Drinking Water Tested	For grouting applications including:  Stopping of flowing water Restoration of concrete structures Larger crack and cavity consolidation In combinate with NordicACR Gels for ground and rock hardening.
NordicPUR Flex	Water-reactive, One-Component polyurethane  ✓ Fast Reacting ✓ CE Certified	A ductile end product for grouting applications including:  Stopping of water penetration Crack injection in brick and concrete structures Filling of wet cracks in concrete structures Other civil engineering and tunnel construction works according to EN 1504-5.

## **Construction, Mines, Tunnels**



Nordic Geo Support – the global expert







## NordicPUR 2C Polyurethane Resins Overview High Performance 2 Component Polyurethane Based Solutions

Resins	Description	Typical Applications
NordicPUR 180 Slow Slow Reacting	Two-Component injection resin  ✓ Slow reacting ✓ Long pot life ✓ accelerated curing with water contact	For grouting applications including:  Stabilisation in wet or water bearing rock Sealing water ingress from rock formations, dams, or shaft walls For renovation of wet shafts, tunnels, sewers, or brickwork Deep injection work
NordicPUR 90 DW Slow Reacting	Two-Component injection resin  ✓ Developed and approved for Drinking Water applications ✓ Slow reacting ✓ Long pot life ✓ accelerated curing with water contact ✓ CE Certified ✓ General Building Inspectorate Approval for curtain grouting	For grouting applications including:  Stabilisation in wet or water bearing rock Sealing water ingress from rock formations, dams, or shaft walls For renovation of wet shafts, tunnels, sewers or brickwork Deep injection work
NordicPUR 5 Quick Fast Reacting	Two-Component injection resin  ✓ Fast reacting ✓ Foams upon contact with water ✓ Hardens un-foamed when not in contact with water ✓ CE Certified	For grouting applications including:  Sealing against water under hydrostatic pressure in strata, dams or shaft walls  Sealing and consolidation in water-bearing strata and against water under pressure  Curtain injection in tunnels, dams, or on shaft walls  Sealing against water  Stabilisation, consolidation  Repairing of cracks &/or fissures
NordicPUR 2 Fast Fast Reacting	Two-Component injection resin  ✓ Fast reacting ✓ Foams upon contact with water ✓ Hardens un-foamed when not in contact with water	For grouting applications including:  Sealing against water under hydrostatic pressure in strata, dams or shaft walls  Sealing and consolidation in water-bearing strata and against water under pressure  Curtain injection in tunnels, dams, or on shaft walls  Sealing against water  Stabilisation, consolidation  Repairing of cracks &/or fissures
NordicPUR Rapid Rapid Reacting	Two-Component injection resin  ✓ Fast reacting ✓ Foams upon contact with water ✓ Hardens un-foamed when not in contact with water	For grouting applications including:  Immediate sealing actions  High water flow  Sealing strong water ingress in construction pits, pipelines, shafts, and tunnels
NordicPUR Extreme Ultra-fast Reacting	Two-Component injection resin  ✓ Extremely fast reacting ✓ Foams upon contact with water ✓ Hardens un-foamed when not in contact with water ✓ Excellent in cold conditions	For grouting applications including:  Immediate sealing actions  High water flow  Sealing strong water ingress in construction pits, pipelines, shafts, and tunnels

## NordicSIR 2C Silicate Resins Overview



## **High Performance Silicate Based Solutions**

Resins	Description	Application
NordicSIR Foam Foaming Silicate NordicSIR Fill Foaming Silicate	Two-Component silicate resin:  ✓ Rapid reaction ✓ Rapid expanding ✓ Extremely high bond strength characteristics	For grouting applications including:  Strata injection Sealing Cavity and void filling Ground stabilisation Stabilisation of debris
NordicSIR Fill DW Foaming Silicate	Two-Component silicate resin:  ✓ Rapid reaction ✓ Rapid expanding ✓ Extremely high bond strength characteristics ✓ Developed and approved for Drinking Water applications	For grouting applications including:  Strata injection  Sealing  Cavity and void filling  Ground stabilisation  Stabilisation of debris
NordicSIR Bond Low-Foaming Silicate	Two-Component silicate resin:  ✓ Very fast reacting ✓ Low foaming ✓ Flexible ✓ Good adhesion properties ✓ High strength	For grouting applications including:  Stabilisation and consolidation of loose rock and soil  Filling smaller cavities and bore-holes  Bonding of materials  Railway maintenance
NordicSIR Flex Non-Foaming, Elastic Silicate  NordicSIR Tuff Non-Foaming, Elastic Silicate	Two-Component silicate resin:  ✓ Non-foaming ✓ Elastic ✓ Excellent adhesion properties	For grouting applications including:  For stabilisation and consolidation where elasticity is needed  Filling of small cavities and bore-holes  Crack injection in rock and concrete structures, etc.
NordicSIR Flex UHS Ultra-High Strength Non-foaming, Elastic Silicate	Two-Component silicate resin:  ✓ Ultra-High Strength ✓ Non-foaming ✓ Elastic ✓ Excellent adhesion properties	For grouting applications including:  For stabilisation and consolidation where a combination of high strength and elasticity is needed  Filling of small cavities and bore-holes  Crack injection in rock and concrete structures, etc.
NordicSIR Underpin NordicSIR SolidSupport	Two-Component silicate resin:  ✓ Rigid to tough elastic ✓ Non-foaming ✓ High Strength	For grouting applications including:  > Underpinning of massive structural elements > Ground and rock stabilization > Filling of small cavities and bore-holes > Crack injection in rock and concrete structures, etc.

## NordicACR Acrylate Resins Overview Fine injection works and repairs



Resins	Description	Typical Applications
NordicACR Flex DW	Three-component, water-expanding hydrogel on acrylate or methacrylate basis that hardens to a rubber-like, flexible product:  ✓ Developed and approved for Drinking Water applications ✓ General Building Inspectorate Approval for curtain grouting ✓ General Building Inspectorate Approval for crack injection ✓ General Building Authority Test Certificate with VPRESS ✓ General Building Authority Test Certificate with ECOPRESS ✓ CE Certified	For grouting applications including:  Repairs and renovations requiring low blending viscosity  Fine to very fine soils  Hair-line cracks  Water-carrying sands/soils  Porous materials  Stabilisation and sealing of loose rock  Stopping water inflow (including salt water)  Injecting of man-accessible sewer lines, pipeline and tubes  Curtain grouting  .
NordicACR Eco	Adjustable, low viscous three-component, water-swelling hydrogel based on acrylate or methacrylate that hardens to an elastic product.  CE Certified	For grouting applications including:  Curtain grouting Ground Stabilisation Stopping of water Joint and crack injection
NordicACR Solid	4 C injection gel on an acrylate or methacrylate basis which hardens to form a product with high compressive strength.  ✓ Extremely low viscosity ✓ good chemical resistance to many acids, alkalis, solvents, adhesives etc in its hardened condition.	For grouting applications including:  Soil and stone stabilisation Consolidation of water saturated sands Masonry injection Where resistance to acids and alkalis, solvents, adhesives is required.
NordicACR FlexAdd	A polyacrylic-based polymer initiating component for the acrylate gels NordicACR Flex DW and NordicACR Eco. It is used instead of water for mixing the B components.  ✓ General Building Inspectorate Approval for crack injection ✓ CE-marking according to EN 1504-5 ✓ General Building Authority Test ✓ Certificate with VPRESS ✓ General Building Authority Test Certificate with ECOPRESS	The use increases flexibility and adhesion of acrylate gels on siliceous surfaces.  > Crack Injection in reinforced concrete > Grouting of injection hoses in combination with NordicACR Flex DW > Renovations of dilation joints in combination with NordicACR Flex DW and NordicACR Eco.



## NordicEPR Epoxy Injection Resins Fine injection works and repairs

Resins	Description	Typical Applications
NordicEPR Crack Fill	A 2-component injection resin on an epoxide basis with specific chemical and physical properties:  CE Certified	For grouting applications including:  For grouting applications including:  force transmitting filling of cracks, voids and interstices in concrete.  slightly moist subsurface possible
NordicEPR Crack Fill Fast	A 2-component injection resin on an epoxide basis with specific chemical and physical properties:  CE Certified	For grouting applications including:  Force transmitting filling of cracks, voids and interstices in concrete.  Slightly moist subsurface possible

## **NordicGEO**

## Polyurethane products for small injection work and repair.

Product	Description	Typical Applications
PUR-O-RIP	A dual component, urethane-based injection resin, for small injection works  CE-marking according to EN 1504-5	For grouting applications including:  > Small water bearing cracks and fissures in concrete and brick structures
PUR-O-RIP LV	A low viscous dual component, urethane- based injection resin, for small injection works  ✓ Solvent free ✓ CE-marking according to EN 1504-5	For grouting applications including:  Hairline crack repairs in concrete or brickwork  Other general injection work in structural repairs
PUR-O-RIP PLUS	A dual component, urethane-based injection resin that foams up in contact with water  ✓ Solvent free ✓ CE-marking according to EN 1504-5	For grouting applications including:  Crack injections in reinforced concrete elements Injection into grouting hoses



## NordicGEO Repair Line Other Products for construction repairs

Product	Description	Typical Applications
HYDROPOX EP1 LV	Very low viscous 2 component epoxy resin	For grouting applications including:  Imbuing, filling and injection of cracks
HYDROPOX EP 1 HV	High viscous 2 component epoxy resin. Comes in a combined can 1.44kg	For grouting applications including:  Crack repairs  Gap filling and hollows in concrete or brickwork
AQUASTOP	AQUASTOP is a watery, solvent free injection product against up-rising humidity in walling (horizontal barrier) based on silane with a creamy consistency  ✓ WTA certified up to a degree of 95 ± 5 % moisture penetration by injecting under gravity.	AQUASTOP is used as water-repellent injection material for abatement of rising humidity in wallS.  The product can even be used at high levels of moisture penetration.
F8000	Single component injection material based on extra-fine cements	For grouting applications including:  Injection in cracks >2.0mm Hollow filling Stabilisation of concrete and brickwork Injection into grouting hoses
F9100	Mineral, single component injection glue based on chalk according to DIN 1060  Minimum Order: Pallet of 50 x 20kg bags	For grouting applications including:  Injection in cracks >2.0mm  Cavity and hollow filling  Stabilisation of concrete and brickwork  Injection into grouting hoses
F9200	Ready to use, non-shrinking injection cement  Minimum Order: Pallet of 54 x 20kg bags	For grouting applications including:  Cement and brick work  Casting of anchors into rocks and soil  Crack injection  Joint repairs  Cavity and hollow filling
F9300	Ready to use dry mixture based on cement. it does not shrink is easy to process and frost protected. Develops a fast and final solidity and can be applied vertical, horizontal and injected.  Minimum Order: Pallet of 42 x 25kg bags	For grouting applications including:  Cement and brick work  Casting of anchors into rocks and soil  Crack injection  Joint repairs  Cavity and hollow filling

## **NordicEPR Epoxy Based Resins Surface Protection Products**



Resins	Description	Typical Applications
NordicEPR TuffCoat	A two-component coating based on epoxy resin with specific chemical and physical properties.  ✓ Excellent adhesion ✓ Highly resistant to chemicals ✓ Takes heavy mechanical loads	Used as a protective coating for:  Factories Refrigerated warehouses Stores Hospitals and laboratories Supermarkets Other high use areas .
NordicEPR LevelCoat	A two-component coating based on epoxy resin with specific chemical and physical properties.  ✓ Self-Levelling ✓ Excellent adhesion ✓ Highly resistant to chemicals ✓ Takes heavy mechanical loads	Used as a protective coating for:  > Factories > Refrigerated warehouses > Stores > Hospitals and laboratories > Supermarkets > Other high use areas

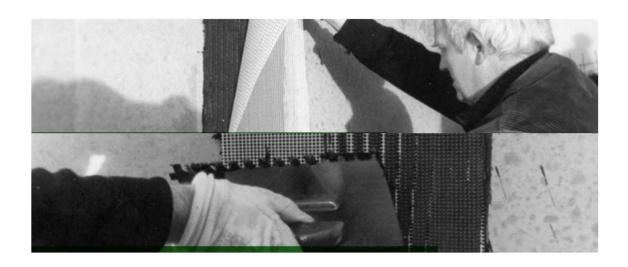
## **NordicGEO structural element protection AQUAPROTECT Systems**

Resins	Description	Typical Applications
AQUAPROTECT®	A saline based protection coating  ✓ Solvent Free ✓ CE-marking in accordance with EN 1504-2 ✓ BAST listed	Used as a protective coating to concreate:  Impregnation barrier to water, chlorides, salts and bases.  Can be combined with NordicEPR TuffCoat .
AQUAPROTECT® STONE	A watery solvent containing hydrophobic agents based on alkoxysilane and siloxane.  V Natural colours of facades remain  V Reduces the green turning effect of ageing	Used as a protective coating for:  Impregnation to brickwork and clinker facades Priming of mineral substrates (brick, sandstones, etc).
AQUAPROTECT® L	A low-viscous water repellent agent based on octyltriethoxysilane.  ✓ CE-marking in accordance with EN 1504-2  ✓ BAST listed	Used as a protective coating for:  Impregnation to concrete surfaces  Protection against water, chlorides, de-icing salts and alkalis in structural works such as roads and bridges.
AQUAPROTECT® L ECO	A saline based protection coating	Used as a protective coating for:  Impregnation to brickwork and clinker facades Priming of mineral substrates (brick, sandstones, etc).



## NordicGEO Bitumen coatings Surface Protection Products

Product	Description	Typical Applications
BITUCOAT PRIMER	Single-component bitumen emulsion:  ✓ Solvent free ✓ Water dilatable	Use as a precoating for BITUCOAT FS-2K
BITUCOAT FS-2K	2component, plastic modified thick bitumen coating filled with fibres for bridging cracks.	For sealing:  Concrete and brickwork against ground moisture and non-pressurised water  Gluing polystyrene protective panels
BITUCOAT FS-1K FV	1-component, plastic modified thick bitumen coating filled with fibres for bridging cracks.	For sealing:  Concrete and brickwork against ground moisture and non-pressurised water  Gluing polystyrene protective panels
BITUCOAT FS-1K FV -5°C	1-component, plastic modified thick bitumen coating filled with fibres for bridging cracks.	For sealing:  Concrete and brickwork against ground moisture and non-pressurised water Gluing polystyrene protective panels
BITUCOAT Glass Fibre Mat	Alkali-resistant, non-slipping, dimensionally stable, non-rotting glass fibre mat; 1 mm thick, mesh size: 4 x 4 mm	For System specific reinforcement of BITUCOAT FS-2K thick bitumen coating.





## **Nordic Geo Support Injection Pumps and Accessories**

NordicGEO Injection pumps range offers the right product for injection resin applications. Working with specialist manufacturers to provide the best solution to your pumping needs. The technical range below is an overview of products available to our customers today.

### Pumps for single component resins



A small, light, pneumatic powered one component injection pump for the processing of polyurethane and epoxy resins.



Small, light, electric 1-component injection pump for processing of polyurethane and epoxy resins.



Two component pumping solutions

Nordic Geo Support offers a range of two component pumps for all technical applications.





### Packers and lances

- Curtain grouting
- Surface injection and retrospective horizontal seal in brickwork
- Crack injection in reinforced concrete structures
- Rennovation of dilatation joints



### **Borehole Packers**

Ø 36 mm

Ø 40 mm Ø 52 mm



## Piling Injection Spears, Points and Feeder Pipes



Hoses, coupling, valves, connections Complete systems for the project

