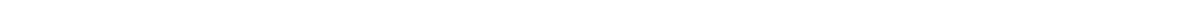


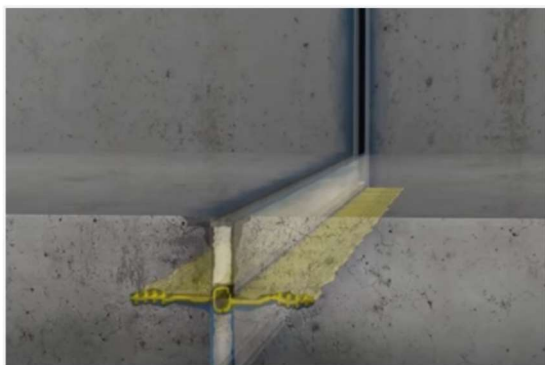
NORDIC GEO SUPPORT

TPH Joint Sealing Systems

FOR
CONSTRUCTION AND TUNNELLING



Sealing Solutions



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NORDIC GEO SUPPORT offers a comprehensive range of Sealing 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 high quality, high performance solutions to your project challenges.

Other Specialised Solutions Available for:

Renovation works



Biogas Plants



Sewer Repairs



Coastal Protection, Flood Areas.



Hydrophilic Rubber Systems

(Water-swelling rubber)



HYDROTITE SYSTEMS

Water-swelling rubber (hydrophilic rubber) is used for sealing of construction joints against pressurised water in reinforced concrete structures.

HYDROTITE®, HYDROSEAL and AQUA TACKSEAL® are hydrophilic rubber profiles which are used widely as sealing compounds in structural, civil, construction engineering and tunnel construction.

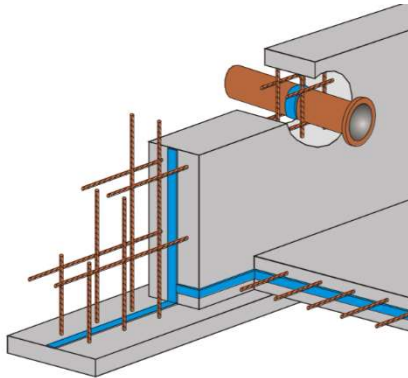
The various hydrophilic rubber profiles stand out especially due to high chemical resistance against acids, alkalis, fuels, mineral oils, organic solvents etc. in addition to its extremely good mechanical properties such as high elasticity and high tear strength. They only differ in the raw material base and the maximum swelling rate.

- Easy processing
- Long-term efficacy
- Also applicable in tidal zones
- High chemical resistance against sewage, manure and chemicals

HYDROTITE®

Water-swelling rubber based on polychloroprene

- For construction joints in structural, civil and construction engineering
- High chemical resistance against sewage, manure, chemicals aviation fuel (Jet A-1) and deicer
- Integrated pressure limit for small wall dimensions



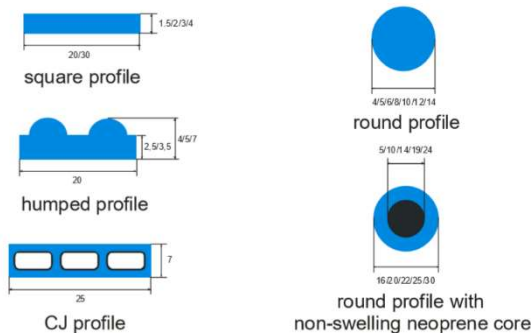
Technical Parameters

Shore A hardness approx. 50
 Tensile strength approx. 3,0 MPa
 Elongation at break approx. 600%
 Water absorption approx. 800 -1300 Vol.% *
 Delay coating yes

Standard

DIN ISO 7619-1
 DIN EN ISO 527
 DIN EN ISO 527
 DIN EN ISO 62

Profile Types and sealing



For a successful application of HYDROTITE in construction joints, the selected profile is placed with its cross-section in centre, or at a distance of 10 cm to the nearest concrete edge and bonded over its full surface to the existing concrete with FIX-O-FLEX or QUELLFLEX.

Rough surfaces should be smoothed before adhering the profile use QUELLFLEX

If damp concrete exists, the use of FIX-O-FLEX is a must. Joints and lap over parts are fixed by means of

QUELLFLEX

HYDROTITE® CJ-Profile

3-chamber-profile, co-extruded, polychloroprene based profile with non swellable core and hydrophilic rubber made jacket for renovation and sealing of construction joints in

- Structural, civil and construction engineering
- Tunnelling constructions in cut and cover technique or NATM (New Austrian Tunneling Method)
- channels, sewage plants, biogas and biodiesel plants
- delicate or thin constructive elements (cavity walls)

Main Advantage: compensation of swelling tension development due to internal cavities

Product	Part Number	Packaging
Typ CJ-0725-3K: 7 x 25 mm	4902335191	4 pieces x 10 m

HYDROTITE® round profile

Hydrophilic rubber based on polychloroprene for sealing of

- sheet piling joints
- joints
- pipe breakthroughs
- lock gates
- sewage ducts

Main advantage: pressure waterproofing even in small joint gaps.

Product	Diameter (mm)	Part Number	Packaging
RSS 040 P	4mm	4902335121	10 x 20 m
RSS 050 P	5mm	4902335122	10 x 20 m
RSS 060 P	6mm	4902335123	10 x 20 m
RSS 080 P	8mm	4902335124	5 x 20 m
RSS 100 P	10mm	4902335125	3 x 20 m
RSS 120 P	12mm	4902335126	2 x 20 m
RSS 140 P	14mm	4902335127	3 x 15 m
RSS 160 P	16mm	4902335128	2 x 10 m

HYDROTITE® rectangular profile

Hydrophilic rubber based on polychloroprene for sealing of

- construction joints in pipe breakthroughs
- manure and sewage tanks
- steel structures such as storage tanks
- catch basins for chemicals

Main advantage: low height

Product	Dimensions	Part Number	Packaging
SS 0220	2 x 20mm	4902335101	4 x 25 m
SS 0320	3 x 20mm	4902335102	4 x 25 m
SS 0330	3 x 30mm	4902335103	3 x 25 m
SS 0420	4 x 20mm	4902335106	5 x 20 m

HYDROTITE® rectangular ridge profile

Water-swelling rubber based on polychloroprene for sealing of

- Working joints in tunnels both C&C or NATM
- Construction joints in canals, sewage plants, biogas and biodiesel plants
- Construction joints in reinforced concrete
- Gaskets for pre-cast elements in tunnels
- Safety collection basins for chemicals

Main advantage: high swelling mass

Product	Dimension	Part Number	Packaging
RS 0420-2,5	4 x 20mm	4902335110	5 x 20 m
RS 0520-3,5	5 x 20mm	4902335111	5 x 20 m
RX 0720-3,5	7 x 20mm	4902335112	5 x 15 m

HYDROTITE® round profile with neoprene core

Co-extruded, polychloroprene based profile with non swellable core and hydrophilic rubber made jacket for renovation of

- dilatation and expansion joints
- parting joints
- "Cold" (work) joints

Main advantage: can be subjected to high compressive pressure due to internal neoprene core

Product	Diameters	Part Number	Packaging
RSS 1610	16/10mm	4902335131	2 x 10 m
RSS 2014	20/14mm	4902335132	2 x 10 m
RSS 2205	22/05mm	4902335133	2 x 10 m
RSS 2519	25/19mm	4902335134	2 x 5 m
RSS 3022	20/22mm	4905335134	2 x 5 m



HYDROSEAL SYSTEMS

HYDROSEAL is a water-expanding rubber based on CR (CR = Chloroprene Rubber). It is used for sealing purposes in

- Tunnelling works,
- Civil engineering,
- Structural engineering

The expanding property results from the irrevocable bonding of the water-swellaible polymer resin with the rubber matrix by means of vulcanisation. Depending on profile type HYDROSEAL can expand up to 600 vol.% by absorbing water, whereby the rubber matrix ensures strength of shape during swelling process. HYDROSEAL is used for the sealing of construction joints, sealing of pre-cast concrete elements, sealing of joints between old and new concrete, pipe lead throughs etc.

Main advantage: economical alternative to clamp flanged solutions

Product	Dimensions	Part Number	Packaging
KP 1020	10 x 20mm	4902335115	8 x 10 m
KP 2020	20 x 20mm	4902335116	4 x 10 m
KP 3030	30 x30mm	4902335117	2 x 10 m

HYDROSEAL P

HYDROSEAL P is a water-expanding rubber based on polyurethane, which is available in several different types. HYDROSEAL P is used for sealing purposes

- Tunnelling works,
- Civil engineering,
- Structural engineering

HYDROSEAL P has the distinction of a three-dimensional polymer structure, which is built up from unstructured polyurethane chains (macromolecules). The elastomeric features arise due to the weak cross linkage of the polymer chains. The swelling ability happens due to hydrophilic polymer resins, which can expand in contact with water up to approx. 450 % in volume. In order to avoid an early mechanical loading of surrounding fresh concrete by excessive swelling pressure the swelling process is slowly and controlled (see volumetric expansion process).

HYDROSEAL P is used for sealing of

- construction joints,
- pipe penetrations
- precast concrete elements such as shaft rings, tubing etc.

Main advantage: competitive price

Product	Dimensions	Part Number	Packaging
NGS 1020	10 x 20mm	4902335706	10 x 5 m
NGS 2020	20 x 20mm	4902335707	10 x 4 m
NGS 3030	30 x30mm	4902335708	5 x 5 m

AQUA TACKSEAL SYSTEMS

AQUA TACKSEAL is a water-expanding rubber based on semi-vulcanised butyl rubber (IIR = Isopren-Isobutylen Rubber).

The material base has a sticky texture which facilitates good adhesion to concrete surfaces.

The expanding property results from the irrevocable bonding of polyurethane-based water-expanding polymer resin with the IIR matrix.

On contact with water AQUA TACKSEAL can expand up to 250 vol. %.

AQUA TACKSEAL is used for sealing of precast concrete elements (e.g. man holes), shaft rings and pipe lead-throughs etc.

AQUA TACKSEAL® box profile

Water-swelling profile of semi-vulcanized Butyl rubber.

For the sealing of joints in:

- Pre-cast rings
- Manholes,
- Light wells,
- Pipe passages
- Canals and gutters.

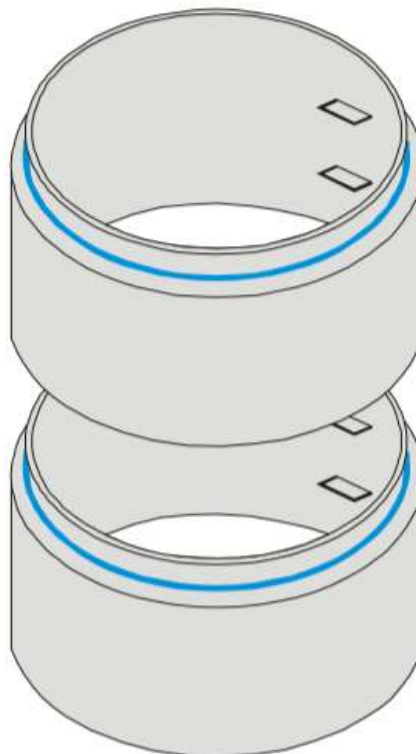
Main advantage: used with low thickness component about 5 cm, puttylike flexible

Product	Dimensions	Part Number	Packaging
NGS ATS 1212	12 x 12mm	4902335108	20 x 3,25 m

Sealing of shaft rings

The main use of AQUA TACKSEAL® PE is the sealing of shaft rings against in-situ groundwater. Shaft rings can be sealed using both sockets and rebates. AQUA TACKSEAL® functions on one hand like conventional sliding ring seals through compression, and on the other hand creates additional sealing through adhesion and expansion pressure.

AQUA TACKSEAL assimilates automatically to the shape of construction.



Metal water stops

FERROQUELL® and FERROTACK are water-stops, which can be fixed to the upper reinforcement layer without requiring time-consuming concrete upturns. The water-stops are 12, 15 or 17 cm high and can be delivered in 2 m strips or 20 m rolls. The reduced circumference in comparison with conventional water-stops is compensated by the coating of the water-stops. The coating of FERROQUELL® consists of stripes of a highly chemical resistant hydrophilic rubber which is to be arranged on the water-side. In addition, the end of the FERROQUELL® strip is provided with a vertical hydrophilic rubber strip which seals off the joint area between sections of the water-stops. The FERROTACK-water-stops ops are optionally furnished with a butyl coating either in stripes or entirely. To meet applications, a comprehensive range of locking and securing devices are available.

FERROQUELL

Waterstop (black plate) with coating of hydrophilic rubber based on polychloroprene-/styrene-butadiene rubber. Beside creating a metal barrier the hydrophilic coating makes an active sealing. No need of concrete upturn or laborious reinforcement adaptation.

- For the sealing of all typical structural construction joints

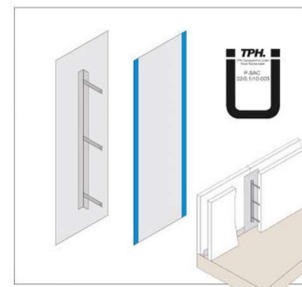
Chemical resistance test in compliance with DIN 4030.



Single Edge Seal



Double Edge Seal



Ferrostoss

FERROSTOSS

Metal element for water pressure tight vertical sealing in joint areas.

FERROECK

Metal element for water pressure tight vertical sealing in corner areas

Product	Dimensions (Length/Width/Thickness)	Part Number	Packaging
NGS Ferroquell Single Edge Sealed	20000 x 150 x 75mm	4902335505	20 m
NGS Ferroquell Strips Single Edge Sealed	2000 x 150 x 0,75mm	4902335506	50 m
NGS Ferroquell Strips Single Edge Sealed	2000 x 150 x 1,20mm	4902335534	50 m
NGS Ferroquell Waterstop Roll Double edge sealed	20000 x 150 x 75mm	4902335504	20 m
NGS Ferroquell Strips Double edge sealed	2000 x 150 x 0,75mm	4902335507	50 m
NGS Ferrostoss (W x T)	250 x 1,5mm	4902335525	On request
NGS Ferrodeck	125 x 125 x 1,5mm	4902335524	On request
NGS Ferroquell Coner (90°) Single Edged Sealed*	250 x 150 x 0.75	4902335526	1 Piece
NGS Ferroquell Coner (90°) Single Edged Sealed*	250 x 150 x 1,20mm	4902335533	1 Piece
NGS Ferroquell Coner (90°) Single Edged Sealed*	250 x 150 x 0.75mm	4902335502	1 Piece

PROOFMATE® Waterstops

The PROOFMATE® Waterstops are designed to be installed for sealing in construction and movement concrete joints. The application of waterstops is normally according to jobsite specifications, WU Guidelines or the DIN 18541 and DIN 18197. The sealing principle of in concrete embedded waterstops is the longer path of water circulation.

According to this physical principle, differently to other forms of joint sealing like swelling profiles or injection hoses, there is the placement of a physical barrier that requires from the incoming water to follow a path along and around the rippled structure that is longer than the actual permeability of the concrete.

The watestop profiles are made of high quality thermoplastic material (PVC-P) and are available in the regular production standards as well as according to DIN 18541 or, if requested, also in a bitumen resistant formulation. As for general jobsite regulation only „end-to-end“ joints are allowed, we can supply workshop finished pieces as “L”, “T”, cross or other special shaped welded elements. Additionally, under request, we are able also to deliver the bands together with VPRESS® injection hoses or HYDROSEAL swelling profiles. Special shapes and colors are also available under request

Typical Joints

- Internal Construction Joint Water-stops
- Internal Expansion Construction Joint Water-stops
- External Construction Joint Water-stops
- External Expansion Construction Joint Water-stops
- Joint Sealing Bands
- HD and HAD Bands
- Silo Waterstops
- Clamp Waterstops

Further information is available in the Proofmate brochure.



Additional Jointing Products

QUELLFLEX

One component, hydrophilic sealing compound based on Polyurethane for bonding of hydrophilic rubber onto uneven surfaces like:

- concrete basements, sheet-pile walls, breakages
- for equalization of dimensional discrepancy during restoration of leaking expansion joints in combination with Hydrotite® round profiles
- for sealing of concrete pre-cast parts, e.g. manhole sections
- for filling and sealing of annular gaps and pipe breakthroughs
- for sealing of plastic parts in building construction, e.g. lights shaft



Description	Part Number	Pieces in Carton
320 ml cartridge	4902335143	24 pieces in carton

HF-KLEBER neoprene adhesive

Single-component viscous adhesive based on polychloroprene

- for gluing of HYDROTITE® hydrophilic rubber profiles to steel and smooth, dry concrete surfaces
- for coating HYDROTITE® profiles to achieve extra swelling retardance (up to seven days; depending on temperature and weather)



Description	Part Number	Pieces in Carton
660 gr tin	4902335161	12 pieces in carton

PUR-O-FLEX mastic sealing compound

Silane terminated, single component sealant for structural engineering and civil engineering.

- versatile applicable
- resistant against early contact to water
- is useful for connecting joints as well as dilatation joints for interior and exterior in the entire area of construction e.g. windows, doors, facades and roofs
- for proofing in metal and wood construction
- for adhesion of elastomeric materials like EPDM
- replaces in the area of construction PUR and neutrally cross-linking silicones



Description	Part Number	Pieces in Carton
600 ml capsule	4902357704	20 pieces in carton

FIX-O-FLEX mastic adhesive and sealing compound

Single-component mastic adhesive and sealing compound based on SPPO (SPPO = silane terminated polypropylenoxide)

- for gluing of HYDROTITE® expanding rubber profiles to uneven concrete surfaces
- for gluing on moist surfaces and even under water
- for sealing joints in sewers
- adheres to steel, stainless steel, aluminium, concrete, tiles, brickwork, glass, wood, marble, glassfibre, PVC, acrylic glass, polystyrene and many others



Description	Part Number	Pieces in Carton
290 ml cartridge (white)	4902335141	12 pieces in carton
290 ml cartridge (black)	4902335172	12 pieces in carton
600 ml capsule (black)	4902335157	20 pieces in carton
600 ml capsule (grey)	4902357730	20 pieces in carton

FIX-O-FLEX H mastic sealing compound

Single-component mastic sealing compound based on SPPO (SPPO = silane terminated polypropylenoxide)

- for joints in building construction accordance with DIN 18540 (primer necessary)
- for connection and dilatation joints inside and outside,
- for permanently elastic sealing



Description	Part Number	Pieces in Carton
600 ml capsule (grey)	490235144	20 pieces in carton
600 ml capsule (white)	4902335178	20 pieces in carton

FIX-O-FLEX primer

Solvent containing primer for FIX-O-FLEX adhesive and sealing compounds

- for cleaning substrates
- for bonding dusts and other contamination
- Airing-time: 2-3 h

Description	Part Number	Pieces in Carton
500-ml-tin	4902335146	1 piece
1000-ml-tin	4902334001	1 piece



FIX-O-FLEX primer Heavy Absorption

A solvent containing primer for FIX-O-FLEX adhesive and sealing compounds for heavily absorbent surfaces such as weathered concrete and brickwork, aerated concrete or natural stone.

- for cleaning substrates
- for bonding dusts and other contamination
- for jointing with FIX-O-FLEX H in accordance with DIN 18540
- Airing-time: 2-3 h



Description	Part Number	Pieces in Carton
500-ml-tin	4902335146	1 piece
1000-ml-tin	4902334001	1 piece

Nordic Geo Support Product Offer

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 bolts 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



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