



WATERPROOF SYSTEM



The most site friendly “ACTIVE SYSTEM”
below grade waterproofing system to date!

WATERPROOF SYSTEM LINE

WATERPROOFING PRODUCTS AND SYSTEMS FOR UNDERGROUND STRUCTURES LONG LASTING DURABLE

OVERVIEW

G&P INTECH has introduced in the market since 1989 several advanced technologies to solve problems of below -grade waterproofing foundations with long life expectation over 100 years.

The solutions adopted are active barrier systems, instead of passive barrier systems, able to interact with the fluid and prevent any infiltration at any time during the life of the building.

The system include products like geomembrane BENTOSIL, geosynthetic clay barrier marked **CE**, hydroswelling sealing joints WATERSTOP BZ 100, WATERSTOP BZ 200, IDROSWELL, IMPERGEN R-FLEX, IMPERGEN FLEX TUBE IFT.

The Company production line include osmotic materials for concrete waterproofing like CEMESEAL (water pressure resistant coating) , RAPID PLUG (fast setting hydraulic compound), MACLIM (two-component flexible coating).

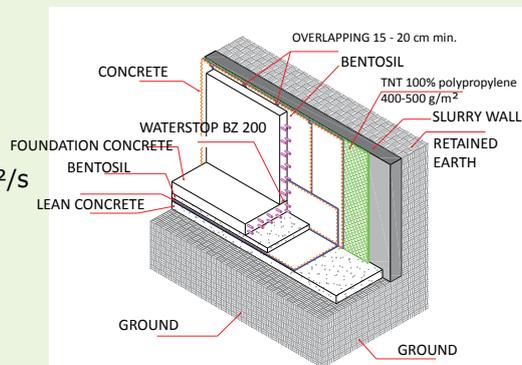
The main applications are on below-grade civil engineering constructions, foundations, tunnels, subways, metro stations, underground parkings.

Geomembrane BENTOSIL marked **CE**

BENTOSIL is a needle-punched geosynthetic clay barrier consisting of a layer of low permeability sodium bentonite supported by two sheets of woven and no-woven polypropylene geotextile. The swelling material is a natural sodium bentonite which has a high grade for swelling (> 26 ml/2g) and a liquid limit value higher than 520%. The connection between the cover and carrier geotextile is achieved by a specific reinforcement system which enable the two geotextiles to be joined by thousands of fibres through the bentonite layer. This gives the barrier a perfect pre-confinement and increases the capability to remain exposed before the final confinement is reached. At the same time the size of bentonite's particle allows a full saturation of geotextile under hydration and increases the self-seaming of geomembrane on the overlapping area.

The main technical characteristics of Bentosil marked **CE** according with EN 13491:2006 are the followings:

Non woven PP geotextile	220 g/m ²
Woven PP geotextile	120 g/m ²
Swelling grade bentonite ASTM D 5890-95	>26 ml/2g
Thickness geomembrane EN ISO 9863-1	6 mm
Bentonite mass per unit area EN 14196	5 kg/m ²
Index Flux (liquid tightness) ASTM D 5887	5E-9 m ³ /m ² /s
Tensile strength EN 10139	12,5 kN/m
Static puncture resistance EN ISO 12236	2 kN
Durability EN 13438	> 25 years



Installation

The high swelling capability of the natural sodium bentonite, combined with mechanical characteristics of geotextile, turn BENTOSIL a reliable product for below-grade waterproofing, even where boundary environmental conditions change (swelling/drying and freezing/thawing cycles) or where there are interacting polluted fluids (remark: for application in contact with high salinity waters please contact Company technical dept.). The installation is simple and fast due to the extreme adaptability of the roll. The system can be applied both in pre-casting and post-casting applications. Overlapping of geomembrane do not require any welding or mechanical intervention.

In vertical applications and where need, BENTOSIL is installed by nail with wide heads and LDPE washers in the overlapping.

Horizontal applications: lay a poor concrete as subbase before applying the roll. In case concrete will not be laid, compact the soil at 85% Modified Proctor, avoid cutting stone and fill holes on the surface. The surfaces have to be free, regular, clean and without standing water. Overlapping will be 15-30 cm according with work and size of roll.

Vertical applications: preparation of surface as above. BENTOSIL has to fixed in the overlapping by nail with wide heads and LDPE washers, approx. 40 cm distance each.

Packaging: BENTOSIL is available in rolls:

Type 1: roll 1,1x 5 m (20 rolls per pallet) - Type 3: roll 2,5x25 m - Type 4: roll 5x45 m

For any additional information on product and installation please contact Company technical dept. info@gpintech.com.

HYDROSWELLING SEALING JOINTS

G&P INTECH has developed several hydroswelling joints used in below grade constructions for the sealing of the vertical and horizontal joints, cracks and fissures.

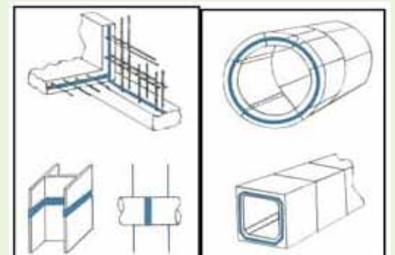
The products are different according with the use and the technical characteristics required. For any additional information please contact Company technical dept.

WATERSTOP BZ 100

Special hydroswelling preformed sealant with retarding treatment for sealing concrete joints (cold joints, horizontal/vertical, prefab, construction joints). The gasket is not designed for expansion joint of the structure. The sealant is high elastic, mechanical resistant with water tightness up to 10 bar and high stability on working life. WATERSTOP BZ 100 is applied by nail or glue PRIMER BZ for different surfaces as concrete, steel, plastic, rubber. The surface has to be clean and smoothed before application.

Technical data

Dimensions	10x20 mm - roll 5 m 20x20 mm - roll 25 m
Colour	black
Tensile strength	> 2,5 MPa
Elongation at break	> 300%
Swelling ratio in water	400%
Working temperature	-30°C +80°C

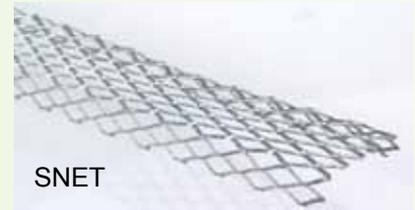
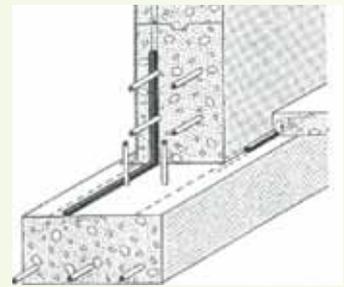


WATERSTOP BZ 200

Hydrophilic joint sealant with retarding treatment composed of natural sodium bentonite (75%) and rubber (25%) for sealing concrete joints (cold joints, horizontal/vertical, construction joints). The sealant is not designed for expansion joint of the structure. The sealant has a high capability of swelling in the water and create a water barrier sealing the concrete joints up to 10 bar, with high stability on working life. WATERSTOP BZ 200 is applied by nail and washer and, if necessary, protected by a metal fastened profile SNET. Install the sealant with at least 5 cm from the exterior concrete border surface. The surface has to be clean, smoothed or slightly rough.

Technical data

Dimensions	20x25 mm - roll 10 m
Colour	green
Elongation at break	7500 %
Swelling ratio in water	600%
Working temperature	-45°C +120°C

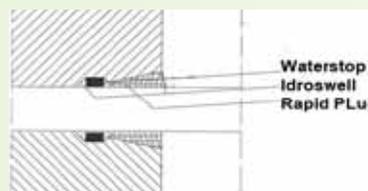
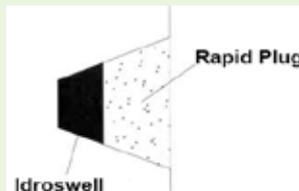


IDROSWELL

Hydroswell mastic water sealing for concrete joints, pipes gasket, leakage. Due to high adhesion of the product can be used for sealing different type of material like concrete, steel, hard plastic, Waterstop BZ 100. The product has excellent characteristics of elasticity, swelling, water resistance and durability. IDROSWELL is applied by extrusion of cartridge or sausage. Extrude continuously. Apply on clean surface. Avoid direct contact with water during the hardening time (10 h approx.).

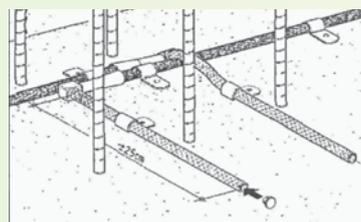
Technical data

Packaging	cartridge 310 ml – sausage 600 ml
Colour	gray
Tensile strength	2,5 MPa
Elongation at break	650%
Swelling ratio in water	300%
Application temperature	> 10°C



IMPERGEN FLEX TUBE IFT

IFT is a preventative high mechanical resistant injection tube of 12 mm diameter for the permanent sealing of cold and construction joints in concrete, pipe penetrations and voids between slurry walls and slabs, etc. Where new and old concrete will join an injection tube is installed. When water is infiltrating into the joint, an injection grout is injected through the PVC end pieces, which protrude out of the concrete at easily accessible places. This way the joint is sealed. Preferably, the injection will be executed after curing and setting of the concrete. The leaking joints can thus be permanently sealed. IFT will be installed onto the hardened concrete during formwork installation. In case of rough surfaces, the gap between IFT and the surface should be filled with IDROSWELL mastic. The tubuline IFT is cut to the required length (recommended maximum length is 6 metres). IFT is fixed on the concrete with clips every 25 cm. Overlapping as per drawing. For the installation and injection with IMPERGEN resin proceed according to the Company recommendations. Packaging : 30 m. kit (included PVC hose, clips, bushes), Injection Resin excluded.

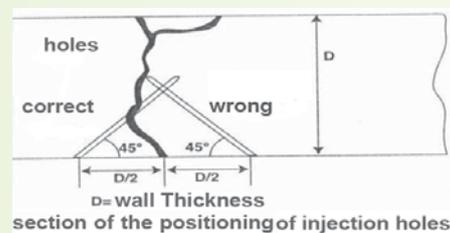
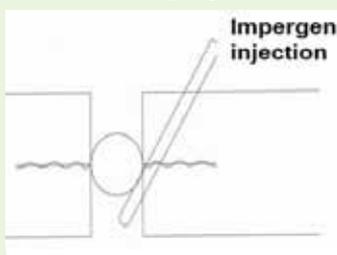


IMPERGEN R-FLEX

IMPERGEN R-FLEX are hydroswell injection resins used for waterproof sealing of cracks and fissures also no stable in walls, floors, concrete constructions, tunnels, parking, underground structures, etc. IMPERGEN is the injection grout for IFT hose. The products are medium flexible (R- free expansion 2000%) and high flexible (FLEX- free expansion 800%) according with the technical specific requirement on site. Normally IMPERGEN R is used for injection on tubuline IFT. Injection pressure 15-180 bar. The system guarantees a very high profile, fast, chemical resistant and durable solution for water leakage and water tightness in the concrete structure.

For technical information of installation and injection ask to the Company technical dept.

Packaging: Impergen R-Flex : Resin pail kg 25 - Accelerator kg 2,3
Impergen Clean pail kg 10



CONCRETE WATERPROOFING COATING

CEMESEAL

Osmotic and inorganic waterproofing coating for concrete surface water pressure resistant positive and negative up to 4 bar. The product is used for concrete waterproofing of wells, tanks, canals, underground structures, drinking water tanks (CEMESEAL is certified for drinking water). CEMESEAL is mechanical resistant, freeze/thaw cycle and salt resistant, long time durable.

The application is easy. Temperature for application: +5°C + 35°C . Prepare slurry with clean water. Apply by brush in 2 hands. Consumption 2-3 kg/m². For any additional information ask to Company technical dept.

Colour: gray

Packaging: bags kg 25
pallet kg 1200



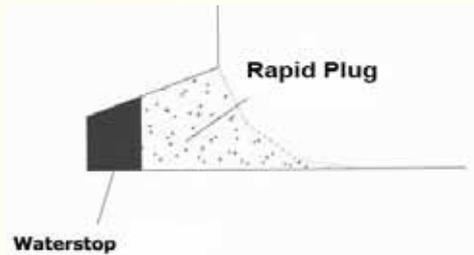
RAPID PLUG

Fast setting hydraulic compound (putty) to stop water leakage on concrete defective structure. The product set in few minutes stopping water leakage. Suitable for repair and sealing defective concrete of joints between walls and slab, wells, tanks, honeycomb, holes in bushing/manifold sections of pipes, underground structures. Do not use on expansion joints. RAPID PLUG is stable, mechanical resistant, freeze/thaw cycle and salt resistant, long time durable.

The application is easy. Temperature for application +5°C +35°C. Prepare putty with clean water at the right temperature. Apply by hand. Consumption upon request. For any additional information ask to Company technical dept.

Colour: dark grey

Packaging: plastic pail kg 10. Bag upon request.



MACLIM

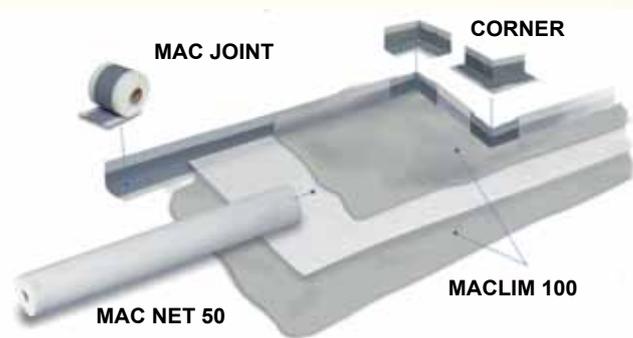
Two components inorganic flexible waterproofing coating for concrete structure available in two formulations MACLIM 100 and MACLIM 200. The product is used for concrete waterproofing of wells, tanks, canals, swimming pool, external underground walls, drinking water tanks (MACLIM is certified for drinking water), terraces and balcony under tiles, shower box, etc. MACLIM is mechanical resistant, adhesive to the support, freeze/thaw cycle and salt resistant, long time durable.

Technical data	MACLIM 100	MACLIM 200
Adhesion to the concrete	> 0,5 N/mm ²	> 0,9 N/mm ²
Elongation at break	20%	40%
Water permeability (pos. press.)	> 0,1 N/mm ²	> 0,15 N/mm ²

The application is easy. Temperature for application +8°C +35°C. Prepare slurry adding Comp A powder with Comp. B liquid and mix deeply by mechanical stirrer. Apply by brush or trowel in two hands. Consumption 3-4 kg/m². If needed, the Company supply elastic net MAC NET 50 to be laid between the two hands of product and elastic strip MAC JOINT for joints. For any additional information ask to Company technical dept.

Packaging: Comp A Powder kg 24 – pallet kg 1152 - Comp. B Resin kg 8 – pallet kg 384

MAC NET 50 roll 50 m² (1X50 m) - MAC JOINT roll m. 25 (width 12 cm)





Waterproofing and water tightness products and technologies for civil engineering and hydraulics, foundations, tunnels, subway stations and underground parking, subways, underground tanks, filled with earth flat roofs, roof gardens, ponds.





Thanks to the technological know-how and the experience acquired in thirty years of activities, G&P Intech is placed in the construction market, infrastructures and cultural heritage as a technology partner and provider of the leading operators of the domestic and international market such as Public Boards, Construction Companies, General Contractors, Engineering Companies, Specialized Appliers.

The constant research of R&D carried out at the best level enable G&P Intech to submit to the market technologies and innovative materials according to the best standards of the modern construction industry and with the existing regulations, which combine quality, reliability and durability of competitive solutions with low environmental impact and reduced costs and maintenance.

The main areas in which G&P Intech operates are related to structural and seismic strengthening with composite materials, to recovery and restoration of buildings and cultural heritage, protection, waterproofing of basements, foundations and tunnels, waterproofing and paving of driveways of bridges, viaducts and roof car parks, road asphalt reinforcement, high reflectance thermoceramic coatings for buiding thermal insulation, industrial flooring and coating.

G&P Intech is active in the market with a consulting international service for engineering and architecture, particularly for the structural rehabilitation, waterproofing in the construction and road industry.



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