FOUNDATIONS EXTERNAL WATERPROOFING SOLUTION BASED ON AQUASMART® – PB SYSTEM.

ALCHIMICA® BUILDING CHEMICALS

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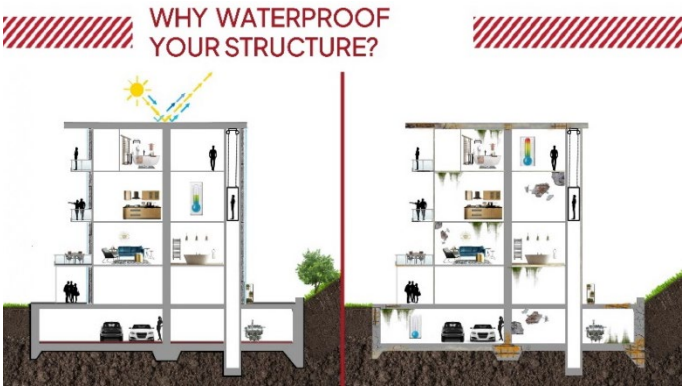
WHY CHOOSE ALCHIMICA FOR EXTERNAL BELOW GROUND WATERPROOFING PROJECTS?

Below ground waterproofing is the first and necessary step before developing a construction project. It is critical to tackle threats such as unequal static forces, water ingress, aggressive chemicals, gas penetration, external mechanical pressures, and temperature variations from the beginning. Today, more building projects require the development of underground areas and basements, especially in large sites like modern hotels, residential buildings, large car parks, or stadiums.



Waterproofing external foundations is crucial due to the porous nature of concrete and its susceptibility to water damage. Without proper waterproofing, water infiltration can cause structural deterioration, especially in reinforced concrete structures with steel reinforcement embedded within the concrete matrix. Waterproofing serves as a protective barrier, preventing water from penetrating the concrete and preserving its integrity. It also extends the lifespan of the structure by shielding it from the harmful effects of water, such as corrosion of reinforcing steel and freeze-thaw cycles.

Waterproofing prevents mold and mildew growth, which pose health risks and further structural issues. By inhibiting their development, waterproofing contributes to a healthier indoor environment. Furthermore, waterproofing enhances energy efficiency by preserving insulation properties and reducing energy consumption for heating and cooling. The initial investment in waterproofing may seem significant, but it is worth it in comparison to the future costs of repairing water damage. Proactively addressing waterproofing can avoid costly repairs and replacements, making it a cost-effective long-term strategy. Compliance with building codes and regulations is essential for ensuring the safety and longevity of structures.

ALCHIMICA provides below ground waterproofing solutions for basement external surfaces, offering excellent concrete protection in high-performance applications.

Our HYPERDESMO®-PB and AQUASMART®-PB technologies, based on bitumen-extended polyurethane liquid membranes, have been the industry standard for almost 20 years and display exceptional properties that efficiently combine the traditional benefits of bitumen with ALCHIMICA's polyurethane technology. Our complete range of PB liquid membranes has exceptional humidity barrier properties, self-healing abilities, certified anti-root performance, and high elongation that provide outstanding crack-bridging capabilities and chemical resistance. This diversity allows them to operate as joint sealers in underground car parking areas and in cut-and-cover tunnels. HYPERDESMO®-PB and AQUASMAR®T-PB waterproofing membranes offer advanced waterproofing solutions for foundations, podiums, slabs, and retaining walls in residential and commercial buildings. With our proven, certified, and competitive solutions, we support owners, engineers, and contractors, offering durability, protection, and long-term service life.

ALCHIMICA is a pioneer and a global leader in complete polyurethane waterproofing solutions. With pedigree and expertise in this field, ALCHIMICA overcomes the challenges that others deem impossible. The technological depth and know-how of ALCHIMICA allow the formulation of innovative PU-based materials that can achieve performance levels that are not typically met. ALCHIMICA has been active in the research, development, and production of building chemicals for 42 years providing solutions for liquid waterproofing, reparations, sealing, flooring, and ETICs. The know-how of ALCHIMICA in Research and Development laboratories in construction, repair, and renovation solutions of buildings and infrastructure meets international industry standards.

ALCHIMICA’S POLYURETHANE LIQUID MEMBRANES

To ensure effective waterproofing, it is crucial to select PU membranes that meet specific criteria: impermeability, flexibility, durability, breathability, and resistance to environmental factors such as UV radiation, heat, humidity, and chemical exposure.

ALCHIMICA is a leader in the waterproofing industry, pioneering the use of liquid applied polyurethane membranes. With a commitment to high performance and durability, ALCHIMICA's products excel in applications where seamless systems are paramount, whether for structural integrity or aesthetic appeal. These membranes

offer decisive advantages, particularly in complex scenarios like geometrically complicated connections with ventilation outlets or upturns.

Throughout its history, ALCHIMICA has continuously expanded its range of polyurethane liquid membranes to provide versatile installation alternatives and long-lasting solutions. From one and two-component polyurethane liquid membranes to bitumen-extended polyurethanes, water-based liquid polyurethane membranes, and advanced technology polyurethane dispersion (PUD) products, each solution is meticulously designed to address a wide array of waterproofing challenges with optimal performance and durability.

ALCHIMICA's liquid membranes offer durability upon application, elasticity to withstand various stresses and traffic, and resistance to chemicals, and ponding water. These properties meet stringent technical specifications, making them suitable for a diverse range of applications. The core objective of ALCHIMICA is to develop waterproofing systems that are competitive, simple to apply, and accessible to all professionals. By prioritizing ease of application and reliability, ALCHIMICA empowers users to achieve effective waterproofing solutions efficiently and effectively. The membranes are seamless, durable, and flexible and provide superior waterproofing performance, waterproof and moisture permeable, preventing water penetration, allowing moisture to escape, and reducing the risk of degradation and failure over time. With mechanical, thermal, and chemical resistance properties and breathability, ALCHIMICA's PU membranes ensure the longevity and efficiency of waterproofing systems.

ALCHIMICA's commitment to innovation and excellence has revolutionized waterproofing technologies globally. With a comprehensive range of polyurethane liquid membranes tailored to meet the demands of modern construction projects, ALCHIMICA remains the premier choice for effective, long-lasting waterproofing solutions.

ALCHIMICA'S BITUMEN-EXTENDED WATER-BASED POLYURETHANE TECHNOLOGY

AQUASMART-PB technology represents an innovative fusion of two ALCHIMICA's waterproofing technologies, integrating Alchimica's HYPERDESMO-PB and AQUASMART technologies into a single, innovative product line. This technology leverages the traditional waterproofing power of bitumen with the advanced, eco-friendly properties of water-based polyurethane, delivering a versatile and highly effective waterproofing solution.

At the core of AQUASMART-PB technology is the bitumen-extended, water-based polyurethane formulation, which combines the durability and moisture resistance of bitumen with the flexibility and environmental benefits of water-based polyurethane. This synthesis results in a waterproofing membrane that is not only easy to apply but also highly resilient to environmental stressors, including temperature fluctuations and physical wear. The technology is designed to withstand severe weather conditions and mechanical stress, enhancing the durability and elasticity of the waterproofing membrane. This makes it ideal for protecting a wide range of structures. By using water-based components, AQUASMART-PB technology reduces the emission of volatile organic compounds (VOCs), supporting projects aimed at achieving green building certifications. The formulation adheres excellently to various substrates, forming a strong, continuous barrier against water ingress and ensuring long-term protection. Suitable for use in both new construction and refurbishment projects, AQUASMART-PB products can be applied to non-exposed applications such as foundation walls, wet rooms, roofs, and more, providing a flexible approach to waterproofing needs. The liquid application results in a seamless membrane that eliminates potential weak points associated with joints or seams in traditional waterproofing methods. Additionally, the technology offers fast curing times, reducing downtime and speeding up project timelines.

AQUASMART-PB technology is available in several formulations, including AQUASMART-PB, AQUASMART-PB-2K, and AQUASMART Bitumen Emulsion, each tailored to meet specific application needs and environmental conditions and comply with EN 1504-2:2004 standards. By choosing AQUASMART-PB technology, professionals in the construction industry can rely on a product that offers superior performance, environmental responsibility, and adaptability across various

applications and conditions. This technology not only protects structures but also enhances their longevity and sustainability, making it an ideal choice for modern waterproofing challenges.

BELOW GROUND WATERPROOFING: ENSURING LONGEVITY AND INTEGRITY IN CONSTRUCTION

As urban areas continue to expand, the necessity for robust, durable construction becomes increasingly significant. Within the construction industry, a critical component of this durability is below ground waterproofing. This essential practice addresses various threats right from the start, ensuring the integrity and longevity of structures. By implementing extensive waterproofing measures during the construction phase, contractors can provide effective moisture control, avoiding the complications and costs associated with retroactive repairs. Below ground waterproofing solutions, such as positive side and negative side waterproofing, are vital for maintaining the structural health of structures.

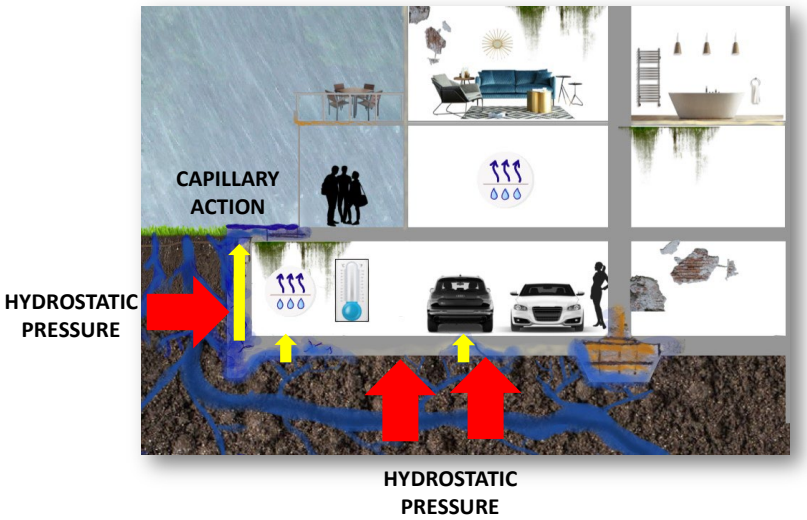
HOW CAN WATER PENETRATE A STRUCTURE?

Causes of leakages:

- Defective structural design
- Use of poor - quality construction materials
- Porous structures
- Improper methodology of construction
- Improper slopes on top surfaces

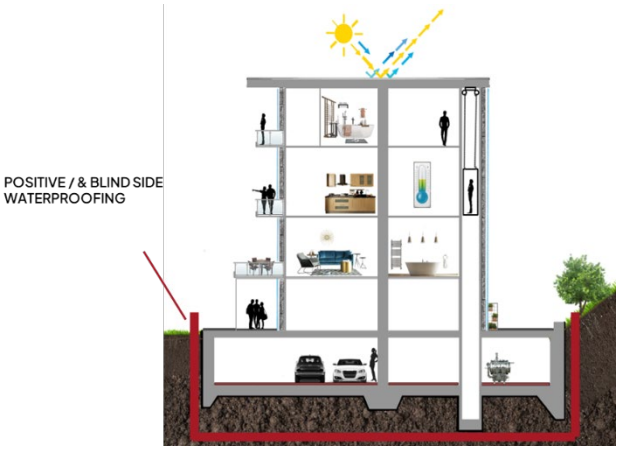
Sources of leakages:

- Subsoil water rising by capillary action
- Cracks in external plaster
- Vegetation growth
- Separation gaps between the partition wall and beams and the columns
- From expansion joints



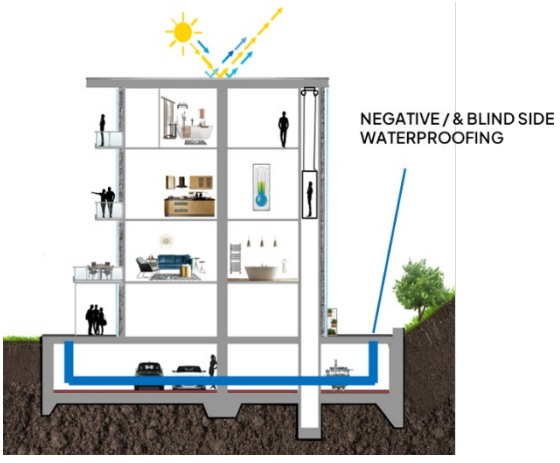
TYPES OF BELOW GROUND WATERPROOFING: EXTERNAL AND INTERNAL

POSITIVE SIDE WATERPROOFING: PROACTIVE PROTECTION



Positive side waterproofing is applied to the exterior surface of the structure, directly facing the source of water. This method is considered the most effective solution because it prevents water from penetrating the building envelope. Positive side waterproofing not only protects the structure from moisture ingress but also withstands hydrostatic pressure, which is the force exerted by standing water. By creating a robust barrier, it shields the foundation from aggressive chemicals and gas penetration, enhancing the building's durability and lifespan. External waterproofing involves applying waterproofing materials to the outside surface of the foundation. It includes techniques such as membrane systems, liquid-applied coatings like bitumen-extended polyurethane membranes, and drainage systems. External waterproofing is essential for protecting the structure from hydrostatic pressure and external water sources.

NEGATIVE SIDE WATERPROOFING: INTERNAL DEFENSE



Negative side waterproofing, on the other hand, is applied to the internal side of the structure. It is designed to protect and waterproof the internal surfaces against water that has already penetrated the building envelope. While this method is crucial for retrofitting and repairs, it is generally less effective than positive side waterproofing because it addresses water infiltration after it has occurred. However, the negative side waterproofing plays a vital role in managing capillary action, which is the process of water rising through porous materials due to surface tension.

UNDER FOUNDATION SLAB WATERPROOFING: CRUCIAL FOR BASEMENT HEALTH

Waterproofing beneath foundation slabs is vital to prevent water from rising through the concrete due to capillary action. This method ensures that the basement remains dry, protecting the structure and any stored items from moisture damage. It also helps in managing hydrostatic pressure from groundwater, which can cause significant damage if not properly addressed. A comprehensive waterproofing system in new construction includes protecting the floor slab. Installing the waterproofing layer beneath the foundation plate, rather than on top of the concrete slab, ensures that the foundation stays dry, and the concrete offers improved thermal insulation. This technique safeguards the concrete from ground moisture, enhancing the structure's durability and thermal efficiency. By blocking water infiltration at the foundation level, this approach also helps create a healthier indoor environment by minimizing the potential for mold and mildew growth.

KEY BENEFITS OF EXTERNAL WATERPROOFING PRIOR TO INTERNAL IN BELOW GROUND PROJECTS

In below ground projects, external waterproofing is essential for several reasons, offering advantages that make it a preferable choice over internal waterproofing. By applying waterproofing materials to the exterior surface of the foundation, external waterproofing serves as the first line of defense against water ingress, effectively preventing moisture from penetrating the building envelope. This proactive approach safeguards the structural integrity by stopping water from reaching and damaging the foundation, thereby reducing the risk of deterioration caused by freeze-thaw cycles and corrosion of steel reinforcement. It also provides robust protection against hydrostatic pressure, aggressive chemicals, and gas penetration, challenges that are more complex to address once water has infiltrated the structure.

External waterproofing significantly enhances energy efficiency by maintaining a dry foundation, which improves insulation properties and reduces energy consumption for heating and cooling. It also extends the lifespan of building materials, reducing the likelihood of mold and mildew growth, and contributing to a healthier indoor environment. Furthermore, by addressing waterproofing needs during the construction phase, external waterproofing minimizes the need for costly and disruptive internal repairs later on, making it a cost-effective long-term strategy.

Overall, implementing external waterproofing in below ground projects ensures durable, stable, and moisture-resistant structures, providing comprehensive protection against water-related issues.

However, in cases where external waterproofing is not possible or has not been properly executed, internal waterproofing becomes critical. Internal waterproofing acts as a secondary line of defense, addressing water infiltration from the inside. This includes using sealants, negative-side membranes, and coatings to manage moisture and prevent further damage. While internal waterproofing is generally less effective than external methods, it is crucial for retrofitting and repairs, ensuring that buildings remain protected and habitable. Integrating both external and internal waterproofing strategies ensures a comprehensive approach to moisture management, offering robust protection for below ground structures.

ALCHIMICA offers a range of advanced waterproofing solutions tailored for below ground applications. Our certified HYPERDESMO®-PB and AQUASMART-PB systems, provide exceptional protection and durability. These systems are designed to address the unique challenges of below ground waterproofing, offering high-performance solutions that combine the benefits of bitumen with innovative polyurethane technology.

By choosing ALCHIMICA, architects and developers can ensure their projects are protected from water ingress, structural deterioration, and environmental stressors. Our solutions provide long-term protection, enhancing the durability, energy efficiency, and overall health of modern buildings.

EN 1504-2

EN 1504-2 is a European standard that focuses on surface protection systems for concrete, aiming to prevent deterioration due to environmental exposure, chemical attack, or physical damage. It covers a wide range of products and aims to enhance the durability and longevity of concrete structures by specifying performance criteria for protection systems. The standard outlines various aspects of concrete repair and protection, including the assessment of existing structures, preparation of surfaces, selection of repair materials, application techniques, and quality control measures.

One key component of EN1504-2 is the assessment of the condition of concrete structures prior to repair and protection activities. This involves evaluating factors such as damage extent, presence of cracks or defects, and environmental conditions affecting the structure. Proper surface preparation is essential for achieving strong adhesion between the substrate and repair materials, maximizing performance and durability.

The standard also provides guidelines for the selection of repair materials based on compatibility, durability, and performance requirements. It addresses application techniques for repair and protection systems, including mixing, placing, and curing procedures. Quality control measures are also a key aspect of EN1504-2, ensuring compliance with specified requirements throughout the repair and protection process. By following these standards, professionals can ensure the durability, safety, and longevity of concrete infrastructure, contributing to sustainable development and the preservation of critical assets.

PREPARATION

For successful and safe waterproofing applications specific tools and equipment are required. Each application might have different requirements.

Minimum application equipment includes protective clothing, a 1KW slow-speed drill, and a brush, roller, or airless spray machine for mixing and application. Before installing the system, the weather working conditions should be considered in order to ensure the correct and safe application of the system. Overall, avoid extreme cold or hot surface conditions. In case of high heat, contractors may apply the products either in the morning or afternoon. The application temperature range is 5°C to 35°C, with no dew point conditions, a maximum 95% relative humidity, and substrate temperature above 3°C. Store materials cool, tools dry, and avoid application during hot hours.

Substrate: To ensure successful application, substrate preparation is crucial. New concrete should be at least 28 days old, clean, dry, and free of substances that could reduce adhesion. Dust removal is recommended, and Alchimica's primer application can be done over damp concrete.

In case of doubtful conditions, please contact ALCHIMICA's technical assistance for instructions.

REPAIR AND LEVELING MORTARS

REPAIRING

In case any spots on the concrete surface require repairs, filling, and/or smoothing such as large cracks, cavities, or surface levelling, ALCHIMICA's HYGROSMART® range of cementitious mortars may be used:

1. **HYGROSMART®-FIX&FINISH** (Single component, rapid-setting shrinkage-compensated, thixotropic, fiber-reinforced, cementitious mortar applied in a single layer from 3 to 40 mm thick, for repairing and smoothing concrete, certified according to EN1504-03, Type R4 CLASS III), or
2. **HYGROSMART®-BUILDING-45-THIXO** (Single-component, shrinkage-compensated, thixotropic, fiber-reinforced cementitious repair mortar, certified according to EN1504-03, Type R4 CLASS III), or
3. **HYGROSMART®-BUILDING-F** (Single-component, reinforced, quick-setting, cementitious repair mortar with excellent adhesion and mechanical properties, easy application in horizontal/vertical substrates. Long pot life allows the application of thick coats without cracking. CE Certified as Class R3 class III repair mortar according to EN 1504-03.
4. **HYGROSMART®-MAK-FLOW** (Single-component, highly flowable and shrinkage compensated mortar for structural repairs and anchoring, certified according to EN 1504-6: 2006 (Anchoring cementitious mortar for strengthening

HYGRO SMART® SYSTEM Advanced Cementitious Technologies

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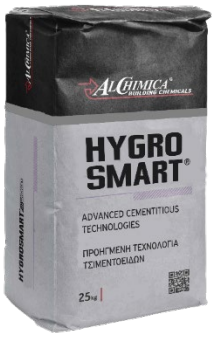
concrete by installing reinforcing steel) and EN 1504-3: 2005, Class R4(Hydraulic mortar (R4-CC) for structural repair of concrete in building and civil engineering works).

LEVELING

In cases where the concrete needs to be levelled or slopes need to be created prior to the installation of the waterproofing membrane, the following products from the HYGROSMART® range can be used, depending on the requirements and desired outcome.

1. **HYGROSMART®-MAK FLOW** (as described above)
2. **HYGROSMART® -DUR CEM 3K** (Three-component, epoxy modified mortar, waterborne, solvent-free, low viscosity, self-levelling, quick curing, zero VOC. Primer for flooring and waterproofing applications, floor-levelling compound. Will effectively seal the substrate as a solution to the problems arising in waterproofing applications on porous and/or humid concrete.



The material is available as SELF LEVELLING (**HYGROSMART®-DUR CEM 3K SL**) or THIXOTROPIC (**HYGROSMART®-DUR CEM 3K THIXO**).

PRIMER SELECTION

After checking the weather conditions and having completed the substrate preparation along with any repairs that might be needed, you can start the waterproofing system's build-up with the selection of a suitable primer. ALCHIMICA's primer range provides unique properties for different substrates.

SUBSTRATE AND CONDITIONS	CONCRETE	HUMID CONCRETE	GYPSUM	METAL STEEL	POROUS CERAMIC TILES	GLASS / GLAZY TILES	PVC MEMBRANES	TPO MEMBRANES	BITUMEN MEMBRANES	LOW TEMPERATURE APPLICATION	VAPOR BARRIER	NEGATIVE PRESSURE / RISING HUMIDITY (1atm.)
PU PRIMERS												
PRIMER-PU	X	-	-	X	-	-	-	-	-	-	-	-
MICROPRIMER-PU	X	-	-	X	X	-	-	-	-	-	-	-
MICROSEALER-PU	X	X	X	X	X	-	-	-	-	-	-	-
MICROSEALER-50	X	X	X	X	X	-	-	-	-	-	-	-
GEODESMO 50	X	X	-	X	-	-	-	-	-	X	-	-
UNIVERSAL PRIMER-2K 4060	X	X	-	-	-	-	-	-	X	X	-	-
PRIMER T	-	-	-	-	-	X	-	-	-	-	-	-
PRIMER W	-	-	-	-	-	X	-	-	-	-	-	-
PRIMER TPO/FPO	-	-	-	-	-	-	-	X	-	-	-	-
PRIMER PVC	-	-	-	-	-	-	X	-	-	-	-	-
WATER-BASED PRIMERS												
AQUADUR	X	X	X	-	-	-	-	-	-	-	X	X
AQUASMART-DUR	X	X	X	-	-	-	-	-	-	-	X	X
AQUASMART-PRIMER PU-2K	X	X	-	-	-	-	-	-	-	X	-	-

ALCHIMICA's primers are designed to secure your waterproofing application in every substrate by strengthening the substrate, stabilizing, and sealing it, offering remarkable adhesion with their respective main membranes and sealants.

SEALING SOLUTIONS

Dilatation joints and inner angles should NOT be treated with a polyurethane-based sealant if bitumen-based materials are used or exist. Bitumen-based materials and polyurethane-based sealants are not compatible if in contact directly. The chemical properties of these materials can react negatively when they come into contact, potentially causing degradation or failure of the sealant. Flashing points, surface irregularities, cracks, and details can be repaired using AQUASMART-PB-2K or AQUASMART-PB.

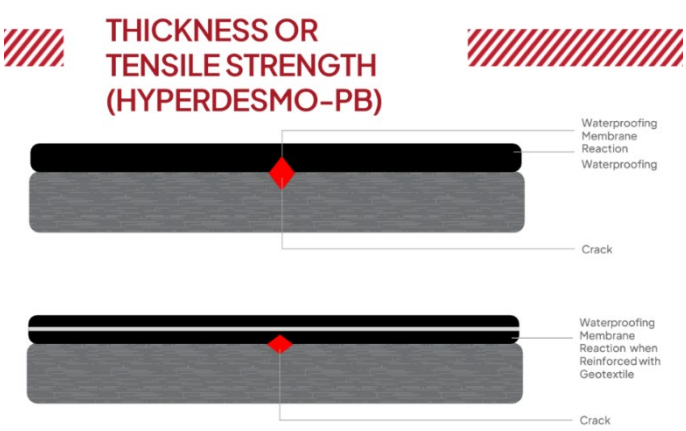
ALCHIMICA's AQUASMART®-PB range offers specialized solutions for sealing, treatment, and repairs in various waterproofing contexts. AQUASMART®-PB-2K, with its two-component system, is particularly effective in environments requiring rapid application and cure times, or where enhanced durability is necessary due to extreme weather conditions or mechanical stress. The powder component contains cement that allows the material to set quickly even in thick layers >4 mm. The application can be done in one coat of very high thickness without cracking. The polyurethane modification of the bitumen emulsion imparts great flexibility to the material. AQUASMART®-PB-2K must also be used for flashing details and details treatment. AQUASMART®-PB-2K is thixotropic providing excellent vertical surface adherence and enabling precise, controlled application in challenging non exposed waterproofing scenarios, such as below ground projects. This makes it ideal for projects that not only need a quick turnaround but also demand a robust barrier against severe external influences. Treating joints, cracks, and detailed areas under the main waterproofing membrane with AQUASMART®-PB-2K is an exceptional choice.

On the other hand, AQUASMART®-PB is suited for general waterproofing applications where the conditions are less demanding but still require a reliable and elastic membrane. For treating joints, cracks, and detailed areas under the main

waterproofing membrane, AQUASMART-PB provides a dependable solution. Its single-component, thixotropic, water-based polyurethane formula is not only easy to handle and apply, but also offers excellent elasticity, making it an ideal choice for general non exposed waterproofing applications where conditions are less demanding. Suitable for projects such as standard below-ground waterproofing of residential basements or light commercial buildings, AQUASMART-PB can be effectively reinforced with GEOTEXTILE strips applied wet-on-wet. This technique allows it to form a composite layer that delivers additional protection, particularly at vulnerable points, helping to prevent future cracking and ensuring a durable, long-lasting seal. Reinforcement can be applied to the entire surface as well as to specific areas that require targeted treatment.

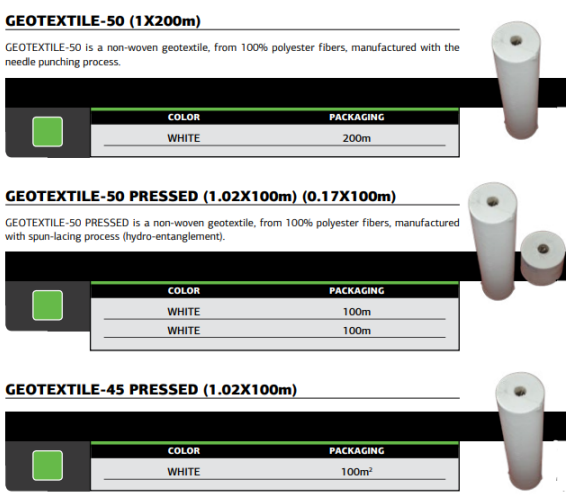
REINFORCEMENT OF WATERPROOFING MEMBRANES WITH GEOTEXTILE

Geotextile reinforcement is a crucial component in the construction industry, providing long-term protective solutions for waterproofing systems. These fabric-made sheets are used in various applications, including drainage and construction projects. They are divided into two categories: non-woven and woven geotextiles. Woven geotextiles have high load capacity and tensile strength, making them ideal for stabilization and reinforcement applications. Non-woven geotextiles, on the other hand, offer durability and ease of application benefits. Nonwoven geotextiles are manufactured by binding short and long fibers together through needle punching or other alternative methods. The term “pressed” in relation to non-woven geotextiles usually refers to the process of needle punching. In this context, “pressed” refers to a non-woven geotextile that has undergone the needle punching process, while “unpressed” usually refers to a non-woven geotextile before this process. The needle-punching process can improve the strength of the geotextile. For cold climatic conditions, it is recommended to choose the PRESSED geotextile.



Geotextiles protect and separate membranes from structures due to their higher pre-break elongation capacity than other materials like glass mesh or fiberglass mesh. They can follow the movement of elastomeric waterproofing materials, achieving reinforcement and long-term durability. However, unsound substrates often have high movement or large cracks, which can cause problems on unarmed waterproofing membranes. Geotextiles can prevent future cracks by sealing and protecting details in areas like roofs, flashing, and joints, and repairing existing cracks and gaps. They are often made of Polyester, which is a strong fiber with excellent oxidation resistance and good mechanical stability. It offers strong oxidation or mildew resistance because it stays resilient when wet. It is used as a reinforcement material embedded between the waterproofing coats, so it does not have direct exposure to the conditions. in this case, any resistance concerns those materials that are in direct contact with the environment and conditions. Another very important advantage of our materials that are in the technology of liquid polyurethane waterproofing membranes is the fact that they can easily be reinforced with geotextile if needed.

ALCHIMICA offers a high-tensile strength range of non-woven geotextiles made of 100% polyester fibers, manufactured with the needle punching process. They can be applied on the full surface between the first two layers of the AQUASMART®-PB System, providing the required reinforcement for certain applications, such as over old bitumen membranes and unsound screeds. They are suitable for solvent-based or water-based liquid waterproofing systems.



METHOD STATEMENT

BELOW GROUND EXTERNAL WATERPROOFING BASED ON THE AQUASMART®-PB SYSTEM

Below ground waterproofing is the first and a necessary step before developing a construction project. It is critical to tackle it from the beginning threats as unequal static forces, water ingress, aggressive chemicals, gas penetration, external mechanical pressures, and temperature variations. ALCHIMICA provides below ground waterproofing solutions for foundations, tunnels and basements offering excellent concrete protection in high performance applications. ALCHIMICA offers 2 solutions based on the AQUASMART®-PB range of products, selecting AQUASMART-PB Or AQUASMART-PB-2K. Both products provide strong, durable, and effective waterproofing solutions, but the choice between them would depend on the specific requirements of the project regarding performance needs and application conditions.

GENERAL SYSTEM CONDITIONS

EQUIPMENT

For successful and safe applications specific tools and equipment are required. Each application might have different requirements in terms of application and protection equipment.

The following application equipment is at minimum required:

- Protective clothing: Protective overalls, masks, and gloves.
- Mixing equipment: 1KW slow speed drill, 400 or 500 rpm, and suitably sized mixing vessel.
- When stirring (or pigmenting) take care not to introduce air into the fluid, which may result in bubbling on the cured membrane. Stirring can either be done manually or with a low speed (300 rpm) mixer.
- Application equipment: Brush, roller, notched trowel, squeegee, rubber spatula, caulking gun, spatula. Specific airless spray machines can also be used. Caulking guns.
- Extra equipment: Digital scale or other measuring equipment

Products can be applied with a variety of equipment. Please choose the desired equipment and method of application according to your preferences and experience after consulting the proposed method of application on TDS of the Product.

APPLICATION WITH AIRLESS SPRAY MACHINE.

For the application of ALCHIMICA's liquid applied PU systems we recommend the following minimum performance for the equipment to be used. This however it is not exclusive, as applicators should use our products with the equipment that is more suitable according to their application method, prior experience, and expertise:

- Minimum pressure: around 200-250 bar
- Minimum capacity: 5.1 lt/minute
- Minimum nozzle diameter: 0.83mm (0.033 inches)
- Examples of such minimum-spec equipment:
  - ✓ *Wagner Heavycoat HC 940 E-SSP Spraypack*
  - ✓ *Graco Mark-X*
  - ✓ *Larius Thor*

DISCLAIMER: IMPORTANCE OF EQUIPMENT CLEANING

To maintain the integrity and efficacy of products, especially when working with liquid chemicals, it is crucial to use equipment that is thoroughly cleaned prior to use. Residual chemicals on containers, mixers, or other tools can initiate unintended chemical reactions or cause contamination **when switching between different products**. Such occurrences may lead to product degradation, and project failure. Adherence to rigorous cleaning protocols is essential to prevent these risks. All users

Use clean equipment when switching from different products, to prevent contamination between different products.

must strictly follow the equipment cleaning guidelines specified herein to ensure product performance and project success.

WORKING WEATHER CONDITIONS

- Application temperature range: 5°C to 35°C.
- Avoid dew point conditions during application.
- Relative humidity must be a maximum of 95% and substrate temperature must be at least 3°C above measured dew point temperatures.
- Do not apply under rain or snow.
- If temperature is above 35°C, the following guidelines are recommended:
    - Store materials in a cool environment, avoiding exposure to direct sunlight.
    - Keep application tools cool and dry.
    - Try to avoid application during the hottest hours of the day.

SURFACE PREPARATION

THE FOLLOWING FACTORS PRIOR TO APPLICATION SHOULD BE CHECKED:

✓ Substrate type and condition.

✓ Previous substrate mechanical preparations (sanding, polishing, shot blasting, or milling)

✓ Porosity of the surface

✓ Existing cracks or damaged areas.

In existing dilatation joints, remove old material and clean it.

✓ Existing membranes or coatings.

✓ The substrates must be both durable and cohesive. Check the substrate for contamination (oil, grease, etc.).

CONCRETE SUBSTRATES

Concrete substrates are used in the construction of roofs and foundations in modern architectural designs. However, because concrete is a porous surface exposed to different climatic conditions, it can absorb water which can then cause damage. Waterproofing is a basic need at almost all stages of construction work, in order to protect structures from the adverse effects of moisture and water ingress. In the case

of exposed concrete roofs, it is vital to avoid any water leak in order to prevent any wear and corrosion of reinforcing steel in the concrete structure.

ALCHIMICA's high-quality concrete roof waterproofing and protection systems consist of quality products that hold excellent workability, durability, elasticity, and resistance to weather, chemical, mechanical, and thermal effects, as well as to UV radiation on either flat or sloping roofs.

Standard concrete substrate conditions
- Hardness: R28 = 15 MPa.
- Humidity: W < 10%.
- Temperature: 5-35 °C.
- Relative humidity: < 85%

PREPARATION

Proper preparation of the concrete substrate is essential for complete adhesion and successful application.

- New concrete or other cementitious substrates should be at least 28 days old.
- The substrate should be clean and free of loose particles, oil, and grease.
- The substrate should be free of any irregularities. If needed, it should be ground with the appropriate mechanical equipment in order to achieve a flat and sound surface.
- The substrate should be free of dust. Vacuum treatment or/ and high-pressure washing is recommended to remove dust.
- Primer application can be done over damp concrete too. But any ponding water should be removed before primer application.
- Metal details should be free of rust, oils, and old paints.
- The surface of PVC pipes should be treated with sandpaper in order to become rough.
- Surface irregularities can be filled with the appropriate HYGROSMART® products.
- For concrete levelling or sloping the appropriate HYGROSMART® products must be used.
- For more information about surface preparation please contact our technical assistance team.

MANDATORY DISCLAIMER BEFORE APPLICATION:

Testing the products to be used in this build-up application on the specific substrate and conducting mock-up tests are essential steps to ensure good adhesion. Mock-up tests replicate real-world conditions and provide a practical way to evaluate the performance of the products in situ. Pull-out tests conducted on these mock-ups help assess the bond strength between the products and the substrate, giving valuable insights into their adhesion capabilities.

By testing the products on the specific substrate and conducting mock-up tests, any potential issues or concerns regarding adhesion can be identified and addressed before full-scale implementation. This proactive approach helps mitigate risks associated with poor adhesion, ensuring the long-term durability and effectiveness of the build-up system.

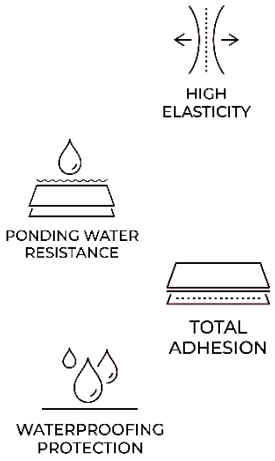
ALCHIMICA advises the thorough testing of the system to be performed prior to proceeding with full surface application in order to determine the suitability of the system based on project requirements.

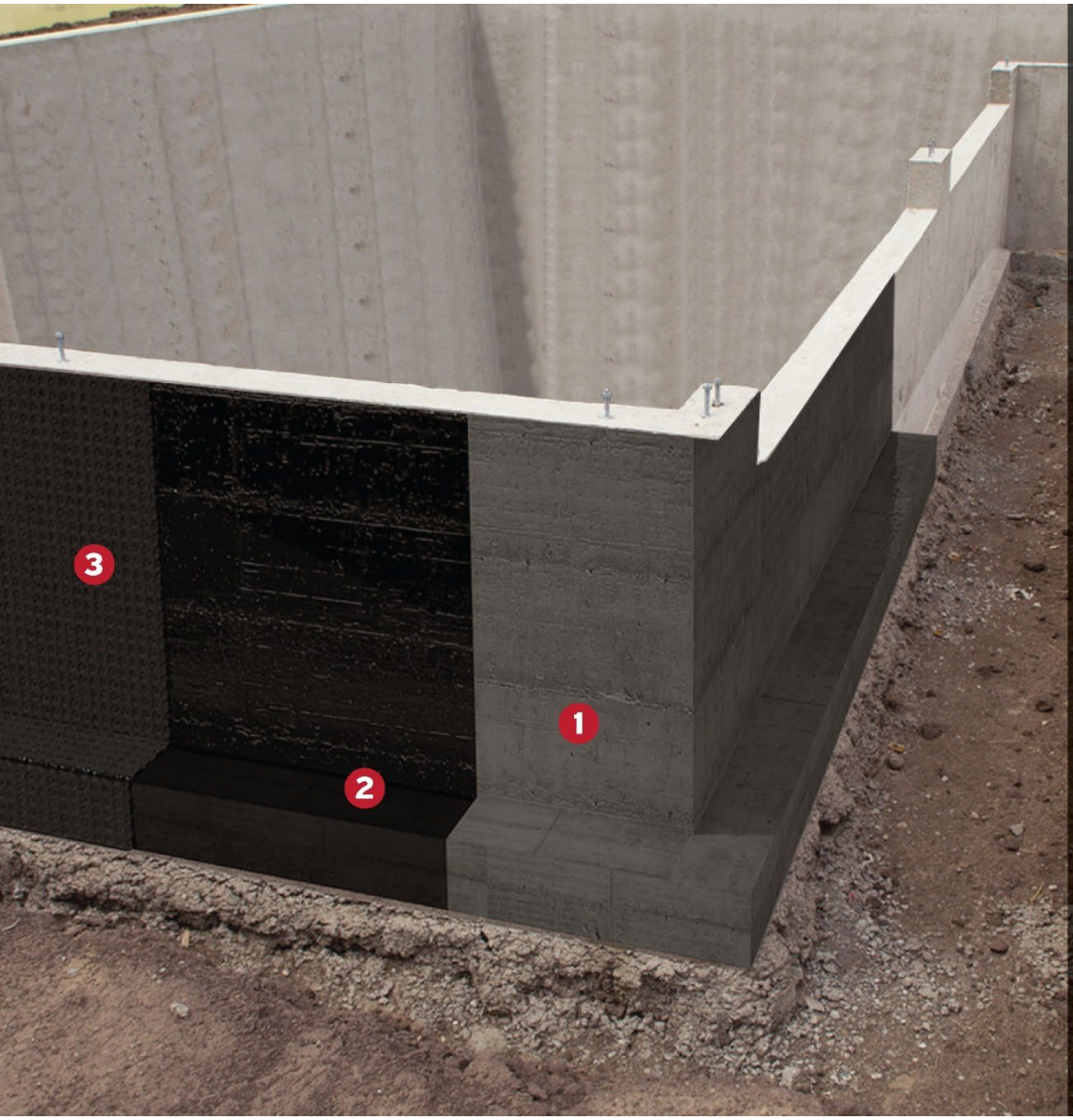
SYSTEM PRODUCTS BUILD-UP

	PRODUCT	CONSUMPTION
1. PRIMER	AQUASMART-DUR	200-400 gr/m^2

CERTIFIED PRODUCTS

	MICROSEALER-50	Subject to porosity
	GEODESMO-50	
2. DETAILS TREATMENT	AQUASMART®-PB	Subject to project needs
	AQUASMART®-PB-2K	
3. MAIN MEMBRANE	AQUASMART®-PB	Total consumption:
	AQUASMART®-PB-2K	2-2,5 kg/m²
4. PROTECTION GEOTEXTILE	GEOTEXTILE-45/50 PRESSED	Subject to project needs
	DRAINING SYSTEM	





1 PRIMING
MICROSEALER-50 / AQUASMART-DUR

2 WATERPROOFING
HYPERDESMO PB-1K-FC / AQUASMART PB

3 DRAINING MEMBRANE

Our certified HYPERDESMO®-PB systems based on bitumen-extended polyurethane liquid membranes are the industry standard for 20 years and display exceptional properties which efficiently combine the traditional benefits of bitumen with ALCHIMICA's polyurethane technology.

SUBSTRATE PRIMING

PRIMER	AQUASMART-DUR / AQUADUR	MICROSEALER-50	GEODESMO-50
CONSUMPTION	- 150-200 gr/m² - water/humidity barrier –three coats with total cons. of 500-600 gr/m²	- 150-200 gr/m² per coat - 100-300 gr/m², subject to substrate porosity	- 150-200 gr/m² per coat - 100-500 gr/m², subject to substrate porosity.
COMPOSITION	WATER BASED EPOXY	SOLVENT-BASED PU	SOLVENT-BASED PU
APPLICATIONS METHODS	brush, roller	brush, roller	brush, roller
TACK FREE TIME, @ 77 °F (25°C) & 55% RH	3-5 Hours	6-12 Hours	1-3 Hours
RECOAT TIME OF PRODUCT WHEN NEEDED	When the material has hardened to the degree where it can no longer be punctured by fingernail 6-24 Hours	6-12 Hours	1-3 Hours
NEXT COAT TIME (HYPERDESMO® MEMBRANE)	Once the colour on the current coat goes from milky white to transparent 6-24 Hours	12-24 Hours	2-24 Hours
RECOMMENDED DILUTION	10% WATER	X	X
ADDITIVES	X	X	X
COLORS	TRANSPARENT	TRANSPARENT	TRANSPARENT
POT LIFE	1 Hour	X	X
COMPONENTS	TWO COMPONENTS	SINGLE COMPONENT	SINGLE COMPONENT

Choose a suitable primer for your project needs and requirements:

■ AQUASMART-DUR is a medium viscosity epoxy-based primer. It is a water-based epoxy primer and humidity barrier, suitable for application in closed spaces too. It is a two-component product with a 1:1 mixing ratio by volume with zero VOC, low odor, and non-flammability. It has a long pot life while being fast curing, easy to clean, and suitable for concrete and humid concrete too.

Mixing: Mix the two components well manually or using a low speed (300 rpm) mixer.

Application: You choose to apply this primer over a sound concrete surface. AQUASMART-DUR primer will create a slight film sealing the concrete and increasing the adhesion. After the AQUASMART-DUR application, you should wait at least 12 hours to apply the main membrane. The main membrane application has to be done within 48 hours after the AQUASMART-DUR application. AQUASMART-DUR is a completely solvent-free and low VOC primer. If a negative pressure humidity barrier is required, increase total consumption of AQUASMART-DUR at a minimum of 500 gr/m² in 3 successive layers (150-200gr/m² per coat)

■ MICROSEALER-50 is a polyurethane based primer/concrete sealer suitable for both porous and non-porous substrates. It is a single component with low viscosity, deep penetration, and slow cure, offering excellent wetting, impregnation, and paint-over time on various substrates. It seals and stabilizes substrates, ensuring good adhesion of the main coat. It is suitable for concrete, humid concrete, metal/steel, porous ceramic tiles, and gypsum boards.

Mixing: Mix the product well manually or using a low speed (300 rpm) mixer.

Application: You choose this primer if your concrete surface is porous. MICROSEALER-50 primer will penetrate, stabilize, and seal the concrete surface in depth. After MICROSEALER-50 application you should wait at least 12 hours in order to apply the main membrane. Apply the main membrane within a maximum of 3 days after primer application.

■GEODESMO-50 is a low viscosity, fast curing, polyurethane based primer. Its fast-curing profile makes it suitable for colder climates and unpredictable rain. It is a single component with excellent wetting, impregnation, and paint-over time properties. It is used for sealing and stabilizing substrates, ensuring good adhesion of the main coat. GEODESMO-50 is the faster curing version of MICROSEALER-50 and is ideal for extreme porosity in concrete surfaces where multiple coats of primer may be required. It can be used on both dry and wet concrete, even green concrete, as a primer and low-cost sealing solution, increasing substrate durability and adhesion strength. It can be used successfully on both porous and non-porous substrates.

Mixing: Mix the product well manually or using a low speed (300 rpm) mixer.

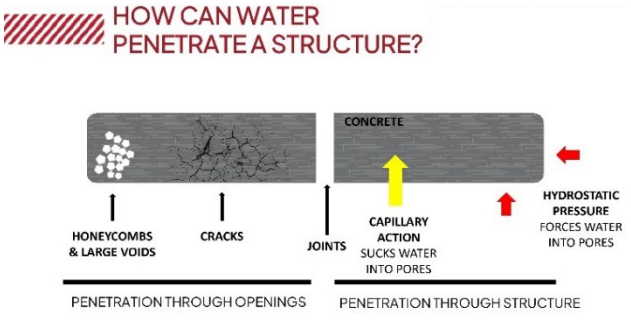
Application: You choose this primer if the concrete surface is extremely porous. GEODESMO-50 has a very fast curing profile (same-day primer), which allows it to be used more successfully in colder climates and when rain is not very predictable because 2-3 hours after this primer application, you can apply the main membrane. Although the material has such a fast-curing profile, it has a good memory also. Application over it, is possible even the next day and up to 48 hours.

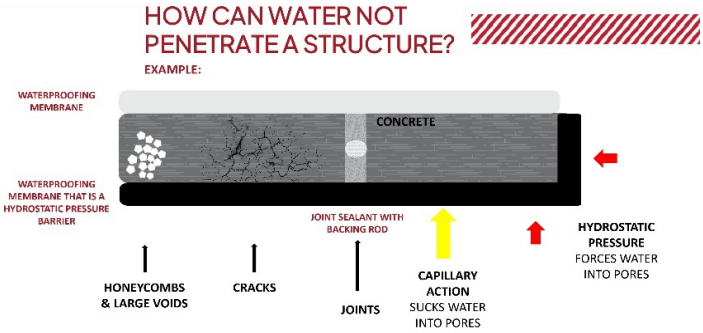
Notes:

1. If it rains after the primer and before the main coat application, you may need to apply one coat of primer again.
2. More primers are available for special cases, surfaces, and weather conditions.
3. For more information about surface preparation please contact our technical assistance team.

DILATATION JOINTS, INNER ANGLES & SMALL CRACKS

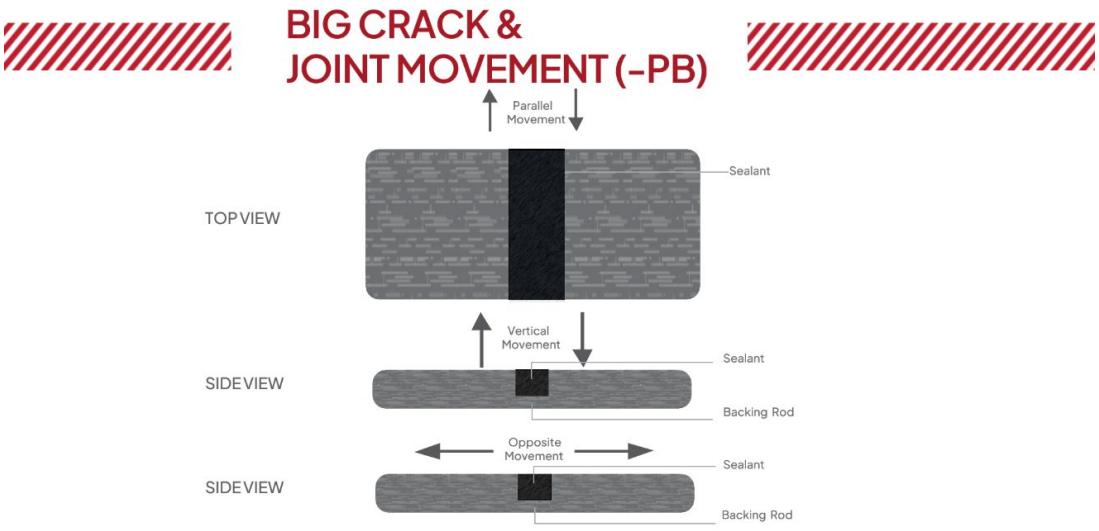
Concrete expansion joints are crucial elements in external foundation structures below ground, where they function to prevent cracking by absorbing stresses and allowing for soil movement. These joints facilitate independent movement and thermal expansion of the concrete, which is inherently non-elastic and prone to cracking. Strategically placed, these joints are designed to prevent structural failure. However, in below-ground applications, such structures with expansion joints are particularly vulnerable to water ingress. To combat this, robust waterproofing and the application of durable sealants are imperative to maintain joint flexibility and ensure proper functionality. It's essential to address all dilatation joints, inner angles, wall-floor connections, visible cracks, and drainage systems. Additionally, elements such as





pipes and any mechanically installed equipment on the foundation need thorough waterproofing treatment to prevent leakage and protect the structural integrity. Dilatation joints, large cracks and inner angles should be treated with AQUASMART-PB or AQUASMART-PB-2K.

Clean joints thoroughly, and ensure that no dust, oil, grease, wax contaminants, or silicone remains are present. While a primer may not always be necessary in details treatment, it becomes essential on porous or wet substrates to prevent air bubbles



from forming due to rising substrate temperatures. Once the primer has cured, apply AQUASMART-PB or AQUASMART-PB-2K. Apply the product locally over any cracks larger than 1 mm before the main coat.

Choose one of the following methods, depending on your preference and needs:

AQUASMART®-PB

Teat joints, small cracks, and details with AQUASMART®-PB using a brush or small roller. For reinforcement then apply a piece of GEOTEXTILE (strips 0.17x100m, non-woven geotextile of 50-100gr/m^2) cut in proper size, wet on wet, for better protection from cracks in these specific points, if movement happens in the future. Immediately, cover the details areas with the sufficient consumption of AQUASMART®-PB to cover completely the GEOTEXTILE. If an anti-slippery effect is required, natural dry quartz sand can be broadcasted over the fresh coat. Remove any excess sand with a vacuum.



AQUASMART®-PB-2K

Using AQUASMART®-PB-2K to treat joints, cracks, and intricate areas before applying the main waterproofing membrane is crucial for establishing a robust system. Ensure surfaces are clean and dry, then apply the product to these vulnerable spots. Its flexibility and strong adhesion make it ideal for sealing joints and detailed areas.

AQUASMART–PB 2K has exceptional thixotropic properties ideal for foundation walls, adhesive for foam-glass type panels, and wet rooms. The powder component contains cement that allows the material to set quickly even in thick layers >4 mm. The application can be done in one coat of very high thickness without cracking. The polyurethane modification of the bitumen emulsion imparts great flexibility to the material even at very low temperatures. That's why AQUASMART-PB-2K must be used for flashing and details treatment. Apply with brush, roller, or airless spraying with minimum total consumption of 3.5-4 kg/m2.

MAIN WATERPROOFING

For foundations where both the basin and walls need to be waterproofed, the AQUASMART-PB range of products provides robust and reliable solutions. ALCHIMICA offers two exceptional products tailored for these applications: AQUASMART-PB and AQUASMART-PB-2K.

AQUASMART-PB is a single-component, water-based polyurethane-modified bitumen emulsion, ideal for general waterproofing where conditions are less severe but still demand a reliable and elastic membrane. This makes it perfect for residential basements or light commercial buildings where straightforward application and effective waterproofing are required. On the other hand, AQUASMART-PB-2K introduces a second component, cement, which enhances its setting capabilities and performance. This feature allows it to quickly set in thick layers over 4 mm without cracking, offering robustness needed in more demanding environments like commercial projects and industrial applications where rapid application and enhanced durability are paramount.

The choice between AQUASMART-PB and AQUASMART-PB-2K should be guided by the specific requirements of the project—considering factors such as environmental conditions, expected stress levels, and the urgency of the construction schedule. By understanding the unique properties of each, you can make an informed decision to achieve optimal waterproofing effectiveness in below ground waterproofing projects.

	AQUASMART-PB	AQUASMART-PB-2K
CONSUMPTION	2-3 kg/m²	3.5-4 kg/m²
APPLICATION AREA	VERTICAL & HORIZONTAL	VERTICAL & HORIZONTAL
APPLICATIONS METHODS	notched trowel, squeegee, roller, or airless spray machine	notched trowel, squeegee, roller, or airless spray machine
DRY TIME	Depends highly on weather conditions and thickness. At 15 degrees C <24 hrs.	Depends highly on weather conditions and thickness. At 15 degrees C <24 hrs.
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time	Depending on the primer curing time
RECOAT TIME	6-24 Hours???	6-24 Hours???
COLORS	BLACK	BLACK
POT LIFE	-	>90 min
COMPONENTS	SINGLE COMPONENT	SINGLE COMPONENT

IMPORTANT NOTE:

- Do not apply under conditions of extreme wet weather or imminent rain or near freezing temperature.
- As is the case with all water-based materials, the coating should be left to fully cure/dry for at least 5 days before tile adhesive and tiles are applied over in wet

room waterproofing applications. Similarly, in foundation wall waterproofing a minimum of 5 days of curing in dry conditions is required.

- The dried coating should be covered with a protective coat to protect it permanently from static, dynamic, and thermal wearing and only then is it possible to refill the excavation pit.
- Outdoor weathering over an extended period must be avoided as this might lead to cracking on the surface.

AQUASMART-PB

AQUASMART®-PB is an advanced, water-based bitumen extended polyurethane coating, notable for its thixotropic properties, making it an exceptional solution for non-exposed applications in waterproofing. This single-component membrane is ideally suited for waterproofing and protection of foundation walls and wet rooms. It differs markedly from traditional bitumen emulsion-based materials in that it is quick-drying and can be applied in thick coats without sagging. The elasticity of AQUASMART®-PB ensures a seamless and durable barrier against moisture, standing out as a true elastomer rather than a thermoplastic material. Its easy application via brush, roller, or airless spraying and its rapid curing capabilities enhances its practicality. This product is also environmentally friendly due to its water-based nature, aligning with sustainable building practices. For areas requiring robust moisture resistance without direct exposure to the elements, AQUASMART®-PB provides a reliable and efficient waterproofing solution.

	AQUASMART-PB
CONSUMPTION	2-3 kg/m²
APPLICATION AREA	VERTICAL & HORIZONTAL
APPLICATIONS METHODS	notched trowel, squeegee, roller, or airless spray machine
DRY TIME	Depends highly on weather conditions and thickness. At 15 degrees C <24 hrs.
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time
RECOAT TIME	6-24 Hours???
COLORS	BLACK
POT LIFE	-
COMPONENTS	SINGLE COMPONENT

TYPES OF APPLICATIONS

APPLICATION BY COATS

- First coat: 1.5-2 kg/m².
- Second coat: 1.5-2 kg/m².

Apply more coats depending on project requirements and system build-up.

- Minimum total consumption: 2-3 kg/m².

APPLICATION WITH REINFORCEMENT

- ✓ GEOTEXTILE
- ✓ FIBER TEXTILE

Apply with brush, roller or airless spraying in one or two coats with minimum total consumption of 2-3 kg/m2 reinforced with GEOTEXTILE fabric available from ALCHIMICA®.

You apply the 1st coat of AQUASMART-PB with a minimum consumption of 1.5 kg/m². When AQUASMART-PB is still wet, you apply the reinforcement (GEOTEXTILE-50 PRESSED (non-woven geotextile of 50gr/m²)). Immediately, wet on wet, application of the 2nd coat of AQUASMART-PB with a minimum consumption of 1-1.5 kg/m² takes place.

APPLICATION WITH BROADCASTING SAND

If an anti-slippery effect is required, silica sand or corundum aggregates can be broadcasted over the AQUASMART-PB waterproofing membrane.

Over the fresh and last coat broadcast natural dry quartz or corundum aggregates, and let it cure. The next day you remove the excess non-bonded aggregates. Most applicators use a vacuum cleaner.

Then, you apply on top a coat of AQUASMART-PB at 1.5 kg/m² in order to encapsulate the silica sand.

APPLICATION WITH AIRLESS (200- 250 bar) SPRAY MACHINE.

1. Open the pail and stir it up to homogenize.
2. If necessary, add 5~10% WATER into the pail and mix it with medium-speed mechanical equipment.
3. Apply thin layers using an airless spray machine.
4. Wait for the recoat time.
5. Repeat this process until the desired or recommended thickness.

AQUASMART-PB-2K

	AQUASMART-PB-2K
CONSUMPTION	3.5-4 kg/m²
APPLICATION AREA	VERTICAL & HORIZONTAL
APPLICATIONS METHODS	notched trowel, squeegee, roller, or airless spray machine
DRY TIME	Depends highly on weather conditions and thickness. At 15 degrees C <24 hrs.
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time
RECOAT TIME	6-24 Hours???
COLORS	BLACK
POT LIFE	>90 min

COMPONENTS	SINGLE COMPONENT

AQUASMART®-PB 2K is a two-component water-based bitumen extended polyurethane coating, ideal for waterproofing foundation walls and wet rooms. This product stands out due to its exceptional thixotropic properties and fast-setting capability, enabled by its unique cementitious second component. This component significantly improves the material's application efficiency, allowing it to set quickly and achieve high thicknesses of over 4 mm without the risk of cracking.

The coating's polyurethane modification ensures superior flexibility, maintaining excellent performance even in very low temperature environments. AQUASMART®-PB 2K is water-based, making it not only easy to apply and repair but also environmentally friendly. It is applied using common methods such as brush, roller, or airless spraying and requires a minimum total consumption of 3.5-4 kg/m² to achieve optimal results.

Designed for non-exposed applications, AQUASMART®-PB 2K is particularly effective in areas where durable waterproofing is essential but direct exposure to the elements is limited. The rapid curing time and robust application properties make it a preferred choice for projects that demand reliability and speed. This product offers a comprehensive solution for lasting protection against moisture ingress in critical wet areas, ensuring long-term durability and structural integrity of the waterproofed surfaces.

TYPES OF APPLICATIONS

APPLICATION BY COATS	- First coat: 2-2.5 kg/m². - Second coat: 2-2.5 kg/m². Apply more coats depending on project requirements and system build-up. - Minimum total consumption: 3.5-4 kg/m².
SINGLE COAT APPLICATION	AQUASMART-PB-2K can be applied in only 1 single coat, with a maximum consumption of up to 4 kg/m² allowing the material to set quickly even in thick layers >4 mm.
APPLICATION WITH BROADCASTING SAND	If an anti-slippery effect is required, silica sand or corundum aggregates can be broadcasted over the AQUASMART-PB-2K waterproofing membrane.

Over the fresh and last coat broadcast natural dry quartz or corundum aggregates, and let it cure. The next day you remove the excess non-bonded aggregates. Most applicators use a vacuum cleaner.

Then, you apply on top a coat of AQUASMART-PB-2K at 2-3 kg/m² in order to encapsulate the silica sand.

DRAINING SYSTEM

After the foundation wall waterproofing is finished, the installation of the drainage membranes takes place. These membranes are crucial for directing water away from the foundation, preventing moisture intrusion, and protecting the structural integrity of the building. AQUASMART®-PB-2K serves as an excellent fixation paste to securely attach the drainage membranes to the foundation wall. Its thixotropic, bitumen-extended polyurethane composition ensures strong adhesion and easy application on vertical surfaces without running or bubbling. This reliable bond between the drainage membrane and the wall ensures effective water management and enhances the durability of the foundation before the soil backfill process begins.

ADDITIONAL PARTS OF THE FOUNDATION SYSTEM

Incorporating insulation boards and additional membranes alongside a foundation waterproofing system, particularly with AQUASMART®-PB products, significantly enhances the protection and efficiency of foundation walls. ALCHIMICA expertly combines its liquid-applied waterproofing solutions to meet the varied needs and project requirements of any structure. This synergy allows for a tailored approach to waterproofing that ensures maximum durability and performance.

insulations Boards: Utilizing insulation boards such as EPS (Expanded Polystyrene) or XPS (Extruded Polystyrene) in conjunction with HYPERDESMO®-PB products helps to improve thermal insulation, creating a more energy-efficient building. These boards are typically installed directly on the foundation walls under the waterproofing membrane to shield the insulation from environmental factors and to enhance its thermal resistance.

Additional Protective Membranes: The integration of additional protective membranes, such as geotextile fabrics or vapor barriers, further strengthens the waterproofing system. These membranes serve multiple purposes: enhancing mechanical

protection, facilitating better water drainage, and providing an additional layer of moisture resistance. When used with HYPERDESMO®-PB products, they ensure a seamless barrier that guards against water ingress and structural damage.

ALCHIMICA's approach to foundation waterproofing systems is fundamentally centered around customization, enabling civil engineers and construction experts to select and tailor solutions according to their specific project needs and structural specifications. This versatile strategy ensures that each component of the waterproofing system aligns perfectly with the unique demands of each construction project. By facilitating a bespoke application of their products, ALCHIMICA enhances not only the water and environmental resistance of foundations but also significantly improves the overall integrity and longevity of the structure. This adaptable approach allows professionals in the field to effectively address a wide range of structural challenges, ensuring that ALCHIMICA's solutions deliver optimal performance and durability.

CLEANING

Clean tools and equipment first with paper towels. Tools and equipment should be cleaned immediately using SOLVENT-01 (or water for water-based materials). Rollers will not be re-usable.

REPAIR AND OVERLAPS PROCESSES

LOCAL REPAIRS

One of the benefits of ALCHIMICA's liquid applied waterproofing systems is the ease of reparations to be carried out when spot problems occur. Nevertheless, it is always recommended to protect the membrane by ensuring that there are no foreign objects, sharp and heavy ones mostly, that they could fall and damage the membrane, to the best possible extent.

In cases where the membrane repair is caused by an accident or assembly procedures that are not covered by the installation, the following procedures must be followed:

- Grind the affected areas or remove the affected area and/or damaged surface by cutting.
- Sanding this area for overlapping, extending it about 20-30 cm around the perimeter.

- Clean the surface around the slit at a perimeter of 20-30cm depending on the repair length. Clean up thoroughly and remove all contaminants from the elements, such as dust or chippings, by mopping and/or vacuuming.
- If necessary, solvent wipe the area with a SOLVENT-01. Allow it to dry completely. The surface must be completely dry before the next steps.
- Apply a thin layer of primer UNIVERSAL-PRIMER-2K-4060 at a consumption of 50-60gr/m^2 by overlapping the membrane at the prementioned perimeter.
- Fill the area by using HYPERDESMO®-PB-1K, tool it to form a smooth patch.
- In severe situations, the coating may have to be totally removed prior to system re-application.

OVERLAPS

In cases where the recoat time (24-48 hours) has been exceeded, the waiting time between jobs has been extended, or unexpected weather conditions (rain) have stopped the application, proceed as follows:
The HYPERDESMO®-PB SURFACE should be clean and free of loose particles and dust. If it rains after the first main coat application, you may need to solvent wipe the area and apply one thin coat of primer again.

- OPTION 1: clean the area and apply primer MICROSEALER-50 at the consumption of 50-80gr/m^2 in order to secure adhesion. After 6-12h you can apply the next coat of HYPERDESMO®-PB
- OPTION 2: solvent wipe the whole area with SOLVENT-01, let it dry, and then apply HYPERDESMO®-PB.

When overlapping layers of HYPERDESMO®-PB-2K, ensure that the application is done while the existing layer is still tacky, within a maximum window of 2 hours. This will ensure a secure bond between layers for a seamless, effective waterproofing system.

REFERENCES

ALCHIMICA throughout the years, has a collection of completed projects from around the world. On our website, you can find where we have provided a variety of solutions and expert know-how, in case studies ranging from the smallest roof to the largest project. www.alchimica.com

ALL OVER THE WORLD

HEALTH AND SAFETY

The system proposal contains volatile flammable solvents. Apply in well-ventilated, no-smoking areas, away from naked flames. In closed spaces use ventilators and carbon-active masks. Keep in mind that solvents are heavier than air, so they float near the floor. The MSDS (Material Safety Data Sheet) of the products are available on request.

This handling safety advice is required for the implementation procedure as well as in the pre- and post-exposure to the loading machinery.

- Protect your lungs by using an air-purifying respirator when handling or spraying.
- Use rubber gloves to protect your skin and remove them promptly after contamination. Wear clean undergarments. After work and before eating, drinking, or smoking, thoroughly wash your hands with soap and water.
- Wear safety goggles to protect your eyes and face from splashes and airborne particles.
- Waste generation should be avoided or reduced.
- Incinerate under well-controlled conditions in line with local and national rules and regulations.
- Re-occupancy of the work site without respiratory equipment is limited to 24 hours if proper ventilation for the sprayed area is provided.
- Contractors and applicators must follow all applicable and necessary storage and safety regulations.
- In any case, review the system's material and safety data sheets.

PRECAUTIONS AND VARIATIONS.

The purchaser must determine the suitability of the products for the intended use and assume all related liabilities and risks. This information, recommendations, and any additional technical advice are given in good faith and are based on ALCHIMICA's present knowledge and experience of the products when properly stored, handled, and applied under normal conditions according to ALCHIMICA's recommendations.

However, ALCHIMICA assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third-party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. ALCHIMICA reserves the right to change at any time the properties of its products. The purchaser of the product(s) must test the product(s) suitability for the intended application and purpose before proceeding with a full application of the product(s).

The performance of the products build up described herein should be verified by testing and carried out by qualified experts.

NOTE: This method statement is offered by ALCHIMICA as a 'summary proposal' for **EXPOSED CONCRETE ROOF WATERPROOFING BASED ON HYPERDESMO® SYSTEM**. For projects' particularities and more precise technical support, please contact ALCHIMICA at: alchimica@alchimica.com

Please consult the above-referred products' technical data sheets (TDS) and safety data sheets (SDS). Under any circumstances, ALCHIMICA does not assume any responsibility for the performance of the waterproofing system given the conceptual flaws of the existing build-up. Imperative for the performance of the system is the correct cleaning, inspection, and maintenance of the waterproofing system. For projects' particularities and more precise technical support, please contact ALCHIMICA at: alchimica@alchimica.com

Where alternative systems are to be used, these must be submitted to ALCHIMICA for approval. ALCHIMICA will not accept responsibility or liability for variations to the above under any other condition.

LEGAL NOTES AND CITATION

- This is a technical document, without legal value.
- No liability or warranty of product performance is created by this document.
- All the information included is collected from materials TDS, DoP, and certificates available at the moment of publishing.
- ALCHIMICA S.A. does not guarantee the accuracy of its instructions or specifications, nor do we assume any responsibility for damages resulting from the use or reference of the information provided. The company reserves the right to change the properties of its products at any time, and the current version of the technical data sheet is available on the website www.alchimica.com/en
- Appropriate Technical Documentation and/or Specific Technical Documentation: The performance of the products identified in the DoP files conform with the set of declared performances. This declaration of performance is issued in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer.
- It is recommended to check the TDS and MSDS of all the materials before use and application.

- The use of these materials and products is beyond the scope and control of ALCHIMICA.
- Proper application is the responsibility of the Buyer and/or Contractor.

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