EXPOSED CAR PARK SOLUTION BASED ON HYPERDESMO®-SYSTEM.

ALCHIMICA® BUILDING CHEMICALS

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WHY CHOOSE ALCHIMICA IN CAR PARK WATERPROOFING PROJECTS?

Car parks, also known as parking garages, parking structures, or parking decks, are essential in urban areas, offering vital parking solutions for commuters, businesses, and residents. These structures, ranging from small open-air lots to expansive multi-level facilities, face constant vehicular traffic, varying weather conditions, and potential chemical spills. To ensure their durability, safety, and functionality, robust waterproofing and flooring systems are crucial.

Waterproofing concrete surfaces in structures like car parks is vital due to the porous nature of concrete and its susceptibility to water damage. Without proper waterproofing, water infiltration can lead to structural deterioration, particularly in reinforced concrete where steel reinforcement is embedded within the concrete matrix. Waterproofing acts as a protective barrier, preventing water penetration and preserving the concrete's integrity. This process extends the structure's lifespan by shielding it from water-induced harm, such as corrosion of reinforcing steel and freeze-thaw cycles. Additionally, waterproofing prevents mold and mildew growth, which pose health risks and further structural issues. By inhibiting these developments, waterproofing contributes to a healthier indoor environment. Furthermore, it enhances energy efficiency by preserving insulation properties and reducing energy consumption for heating and cooling. Though the initial investment in waterproofing may seem significant, it proves cost-effective in the long run compared to repairing water damage. Proactively addressing waterproofing can prevent costly repairs and replacements, making it a prudent long-term strategy. Compliance with building codes and regulations is also essential for ensuring structural safety and longevity.

In car parks, the need for effective waterproofing and flooring systems is amplified by the various stresses they endure. Constant vehicular movement causes significant surface wear, necessitating high abrasion resistance. Car parks are exposed to

automotive fluids like oil, brake fluids, and antifreeze, which can degrade unprotected surfaces. For exposed car parks, weather elements such as rain, snow, and sunlight can cause substantial damage, making UV resistance and tolerance to temperature variations crucial. Slip resistance is vital to ensure the safety of both pedestrians and vehicles, especially in wet conditions. Minimizing tire noise enhances the user experience, particularly in indoor car parks where noise can echo and amplify.

Car parks can be categorized into exposed and non-exposed systems, each with specific requirements. Exposed car parks, open to the elements, must withstand various weather conditions and therefore require waterproofing to prevent water ingress, UV resistance to guard against sunlight degradation, temperature variation tolerance to handle significant changes without cracking, and mechanical strength to endure vehicle loads and stress. Non-exposed car parks, typically enclosed or underground, are protected from direct weather exposure but still require abrasion and chemical resistance to withstand wear and tear from vehicles and exposure to automotive fluids. They also need slip resistance for safety in wet conditions and noise reduction to enhance the user experience by minimizing tire noise within enclosed spaces. Despite their different requirements, both types serve the same fundamental purpose: providing a safe, durable, and functional space for vehicle storage.

ALCHIMICA provides advanced solutions for car park waterproofing and flooring, addressing the specific needs of both exposed and non-exposed car parks. Our comprehensive and tailored solutions include high UV resistance and temperature variation tolerance for exposed car parks, and superior abrasion and chemical resistance for non-exposed car parks, ensuring long-lasting protection against heavy traffic and chemical exposure. ALCHIMICA's products like HYPERDESMO® polyurethane coatings offer exceptional mechanical properties, including high tensile and tear strength, ensuring that the car park surface can handle heavy loads and stresses without compromising integrity. Our solvent-free polyurethane flooring systems provide high chemical resistance, protecting against spillages from oil and brake fluids, and acting as a waterproofing shield.

ALCHIMICA offers both solvent-based and solvent-free product options. Our solutions are designed to offer high performance while minimizing environmental impact. Alchimica's waterproofing systems are built to last. Our products provide high elasticity and crack-bridging capacity, preventing water ingress and protecting the structure from deterioration. The durability of our coatings ensures long-term protection, reducing the need for frequent maintenance and repairs. Alchimica's systems also allow for the application of vibrant, durable traffic markings, enhancing the visual appeal and functionality of the car park. Our products are available in various colors, helping in the organization and navigation within the car park, making it easier for users to locate their vehicles.

With extensive global experience in waterproofing and sealing car park areas, Alchimica provides comprehensive support at every project phase. Our expertise ensures that specific project requirements are met with precision and efficiency. From surface preparation to the application of primers, sealants, main coats, and top coats, Alchimica's team offers technical assistance to ensure a successful and lasting installation. High solar reflectance coatings used in Alchimica's systems help in keeping exposed car park surfaces cooler, contributing to energy efficiency. This reduces the heat island effect and lowers cooling costs for the building, providing an eco-friendly solution.

Car parks, whether exposed or non-exposed, require robust waterproofing and flooring systems to ensure their safety, durability, and functionality. Alchimica's advanced solutions cater to these needs with high-performance products designed to withstand mechanical stresses, chemical exposure, UV radiation, and temperature variations. Our comprehensive, aesthetically pleasing systems offer long-term protection and durability, making them an ideal choice for any car park waterproofing project. With Alchimica's global expertise and support, you can be assured of a high-quality, reliable solution that meets all the demands of modern car park systems.

Liquid-applied membranes offer ease of application and installation, taking the shape of the structure, piercing through pores and cracks, filling voids, and resulting in a seamless elastic membrane. These membranes continue waterproofing even after minor seismic activity, have self-leveling properties, and offer versatile installation alternatives. They are a cost-effective investment compared to repairing water damage and removing sheets and roll membranes. Flat roofs with poor construction and design often face ponding water, where water remains on a roof surface longer than 48 hours after the last rain event, leading to long-term water leakage and costly repairs. Liquid-applied waterproofing systems can prevent these problems and are beneficial for post-repair actions. These membranes with high ponding water resistance can bond with the substrate, providing protection against puddles formed due to poor slope design. To test the adhesion of the existing membrane, it should be pressed on the ponding areas. Without proper ponding water resistance properties, a waterproofing membrane can start blistering and peeling, leading to roof system deterioration. HYPERDESMO® waterproofing membranes offer excellent water resistance, with zero water swelling rate, high UV, chemical, and mechanical resistance, and protection against harsh environmental conditions.

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.

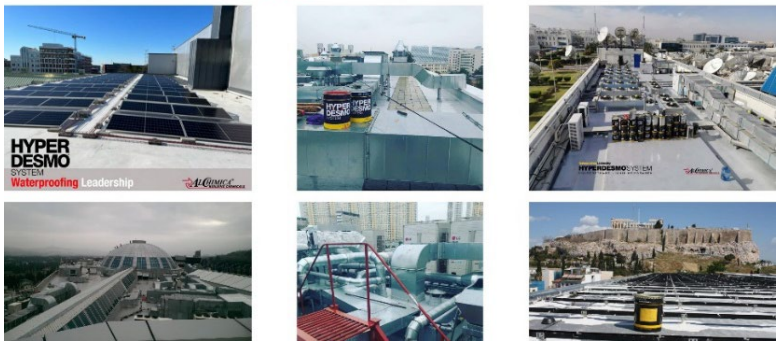
ALCHIMICA'S POLYURETHANE LIQUID MEMBRANES

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.

FULL COVERAGE AT EDGE



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 SOLUTIONS FOR EXPOSED CAR PARK WATERPROOFING

Alchimica offers tailored solutions to meet the specific needs of exposed car park waterproofing and flooring. Our products ensure long-lasting protection against heavy traffic and chemical exposure, with ease of application and exceptional performance.

1. Primers: Alchimica offers a wide range of primers that can be selected based on the substrate type and porosity. Proper selection of the primer is crucial for ensuring the adhesion and effectiveness of the waterproofing system. Our primers provide a strong foundation for subsequent layers, enhancing the durability of the entire system.

2. Waterproofing Membranes: The HYPERDESMO® system and HYPERDESMO®-HOT-CURE POLYUREA-2K offer versatile solutions for waterproofing car parks. The HYPERDESMO® system is known for its ease of application, suitable for use with rollers, brushes, or airless sprays. This versatility makes it an excellent choice for various project conditions. The polyurea system, requiring special equipment, offers rapid curing and is ideal for projects needing quick turnaround times. Select the suitable waterproofing HYPERDESMO product based on your project needs and professional preference.

3. Top Coat with Sand: For the top coat with silica sand embedded, Alchimica recommends HYPERDESMO®-ADY 810. This product is tailored for heavy-duty, high-traffic areas, providing exceptional resistance to abrasion, scratches, and UV rays. It is suitable for exposed car parking decks and can be used as a top coat over other HYPERDESMO® systems.

4. Traffic Line Marking: AQUASMART-TC FLOOR PROTECT is ideal for traffic line marking and can also serve as an additional top coat for extra tire mark protection. This product enhances the visual appeal and functionality of the car park, ensuring safe and organized usage.

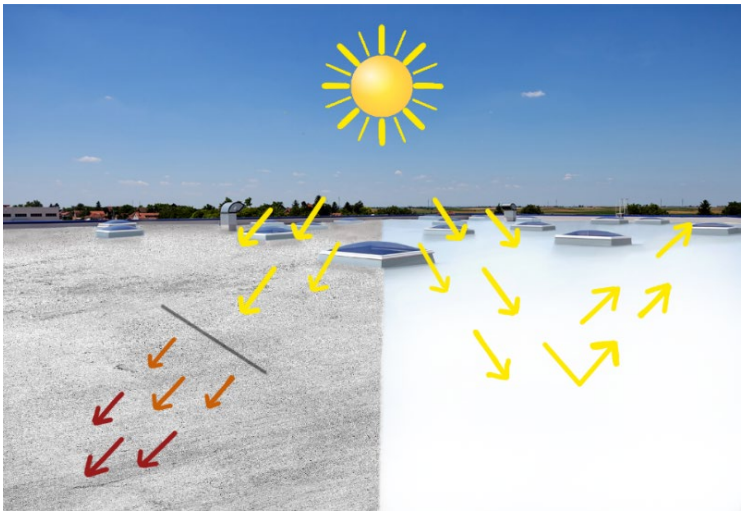
Exposed car parks require robust waterproofing and flooring systems to withstand vehicular traffic, weather conditions, and chemical exposure. While general liquid-applied systems follow a standard structure, each company, including Alchimica, tailors its solutions based on regulations, products, and specific project needs. Alchimica's comprehensive solutions ensure long-term protection, ease of application, and exceptional performance, making them the ideal choice for modern exposed car park waterproofing projects.

COOL ROOFS: ENHANCING URBAN ENERGY EFFICIENCY IN BUILDINGS THROUGH HEAT ISLAND REDUCTION

Urban heat islands (UHIs) pose a significant challenge in cities, with temperature disparities of up to 4°C between urban and rural areas. The primary culprits are concrete infrastructure and high-density materials in urban environments, which absorb and release heat more than natural landscapes. The low solar reflectance of urban surfaces adds to this heat absorption, contributing to the urban heat island effect.

Cool roofs emerge as a cost-effective solution to combat UHIs, enhancing thermal comfort and reducing cooling costs, especially in hot climates with high solar radiation. By incorporating cool roofs into urban design, we can mitigate the heat absorption and release associated with traditional urban surfaces. However, the transformation of land surfaces exacerbates UHIs, as natural vegetation is replaced by structures with low solar reflectance and high impermeability, intensifying the heat island effect.

Human activities, including the use of vehicles and air-conditioning units, further escalate thermal energy in urban spaces, particularly in residential and commercial sectors. Acknowledging and addressing UHIs is crucial for creating resilient and sustainable cities. Mitigating UHIs requires the widespread adoption of cool roofs and reflective materials in urban construction, coupled with urban planning that prioritizes green spaces and sustainable design. By comprehensively understanding and addressing UHIs, we can contribute to the development of cooler, healthier urban environments capable of withstanding the challenges posed by a changing climate.



COOL ROOF

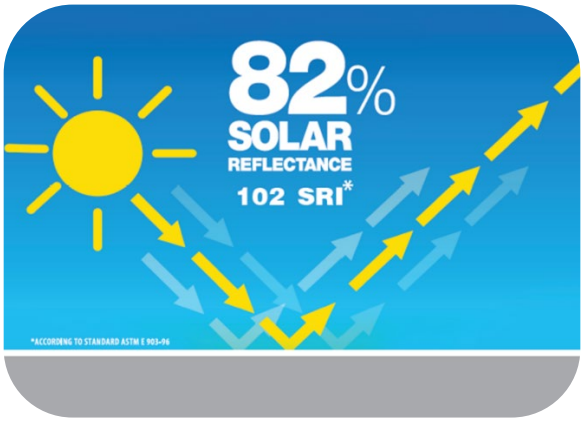
Roofs are one of the most exposed areas in buildings absorbing a high amount of heat. In this respect, cool roofs are considered one of the most sustainable and cost-effective solutions to reduce the heat island effect in cities and create at the same time the right thermal comfort in buildings.

Cool roofs, which reflect over 65% of the sun's rays, play a crucial role in mitigating the urban heat island effect. These roofs, often white, repel heat due to the high solar reflectance of the materials used in their coating. By reflecting sunlight and minimizing heat absorption, cool roofs effectively reduce the heat island phenomenon, positively impacting the microclimate and environment of urban areas. Modern cool roofs employ highly reflective thermoplastic and liquid-applied membranes and coatings, offering long-term benefits.

White cool roofs, compared to traditional dark roofs, offer lower surface temperatures and substantial energy savings, with an average flat roof replacement rate of 5-7% per year. Beyond environmental benefits, cool roofs prove economically attractive to building owners. They foster cooler, healthier cities, enhancing air quality, mitigating

climate change, and significantly reducing overall energy consumption. Energy savings range from 15% to 35.7% in diverse climates, and cool roofs reduce roof surface temperatures by 1.4 ˚C to 4.7 ˚C, impactful in urban environments. Serving as a passive solution to minimize heat gain, improve indoor conditions, and cost-effectiveness, cool roofs' economic and ecological advantages depend on location, climate, and energy usage. Their versatility aligns seamlessly with sustainability, energy efficiency, and environmental well-being goals, making cool roofs a practical measure for cooler, healthier, and more sustainable urban environments.
How is the efficiency of cool roofs measured:

- SOLAR REFLECTANCE (SR): The ability of the roofing material to reflect solar radiation (%).
- THERMAL EMITTANCE: It shows how long a roof holds onto the energy when the sun heats the roofing material. The thermal emittance ranges from 0-1.
- SOLAR REFLECTIVE INDEX (SRI): The SRI is calculated based on solar reflectance and thermal emittance in conjunction with ambient air temperature, sky temperature, and wind factors. The solar reflective index is reported as a value from 0 to 130 ranging from least reflective at 0 to most reflective at 130.



Cool roofs play a pivotal role in advancing energy efficiency and urban sustainability, fostering cooler and healthier environments with improved air quality, specifically addressing the urban heat island phenomenon. Solar-reflective materials, crucial in warmer climates and densely populated areas, reduce cooling loads in regions with high solar radiation and elevated temperatures. Simple measures like applying white membrane systems can yield substantial annual energy savings of 10% or more, contributing to individual building energy efficiency and mitigating the broader urban heat island effect.

These roofs offer economic benefits by reducing energy bills, enhancing indoor comfort, and potentially extending the roof's service life. Moreover, they contribute to

environmental well-being by lowering local air temperatures, peak electric power demand, and power plant emissions. Cool roofs also play a crucial role in reducing heat trapping in the atmosphere by reflecting sunlight, mitigating the demand for air conditioning and overall heat load. In contrast, dark roofs contribute to increased cooling energy needs. Cool roofs stand as an environmentally preferable roofing solution that aligns with economic concerns, offering a practical and sustainable response to the challenges of urban heat islands and energy consumption.

ALCHIMICA's advanced roof waterproofing system with reflective materials based on the HYPERDESMO® System offers an SRI value of 102 tested according to ASTM E1980-01 and offers all the benefits of cool roofs. Thanks to its high solar reflectance the HYPERDESMO® System contributes to the reduction of air conditioning usage which can lessen energy costs by up to 15%. Reduction of the urban heat island effect in cities and suburbs, minimizing thermal impact on the microclimate and local environment. High thermal emissivity to release the absorbed heat. Minimizes heat gains inside buildings, improving occupant comfort. Enhances the durability and the appearance of roofs by significantly lowering material temperatures and extending their life cycle.

Cool roofs are recognized by green building certification systems like LEED, which verify a building's sustainability performance. LEED certification recognizing energy-efficient roofing, water run-off management, and renewable energy as key factors for building credits. Cool roof membranes can earn Credit 5, Option 1 "Heat Island effect – Roofing" in the Site Sustainability category of the LEED protocol.

FROM ETAG 005 (PART 1&6) TO EAD 030350-00-0402

ETAG 005 is a European technical guideline for liquid-applied roof waterproofing systems (kits). The ETAG 005 outlines specific stipulations for liquid-applied roof waterproofing kits based on polymer-modified bitumen emulsions and solutions, glass-reinforced resilient unsaturated polyester, flexible unsaturated polyester, hot-applied polymer-modified bitumen, polyurethane, bitumen emulsions and solutions, and water dispensable polymers. These guidelines aim to ensure the safety and effectiveness of roof waterproofing systems. Since the LARWKs (Liquid Applied Roof Waterproofing Kits) are based on different materials, which might

necessitate additional specific verification and/or assessment, the kits are divided into families of products, dealt with in Complementary Parts. Part 1 provides general requirements for the assessment of liquid-applied roof waterproofing kits and Part 6 is a complementary part of ETAG 005 that specifies specific stipulations for kits based on polyurethane.

The ETAG 005 has been replaced by EAD 030350-00-0402 which is a European Assessment Document for Liquid Applied Roof Waterproofing Kits (LARWK). EADs are more comprehensive than ETAGs and provide a more detailed assessment of construction products. EADs are intended to be used as a basis for issuing European Technical Assessments (ETAs).

The EAD 030350-00-0402 specifies the essential characteristics and relevant assessment methods and criteria for LARWKs. It also provides information on the intended use(s) of the construction product, working life/durability, and specific terms used in the EAD. It outlines the methods and criteria for evaluating a product's performance based on essential characteristics such as external fire performance, reaction to fire, content, emission, and/or release of dangerous substances, resistance to water vapor, watertightness, resistance to wind loads, resistance to mechanical damage (perforation), resistance to fatigue movement, resistance to the effects of low and high surface temperatures, resistance to ageing media, resistance to plant roots, effects of variations in kit components and site practices, effects of day joints, and slipperiness and more.

By choosing a LARWK that is certified according to EAD 030350-00-0402, you can be confident that the product meets the required EU standards and provides long-term protection against water penetration, thus extending the roof’s service life.

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

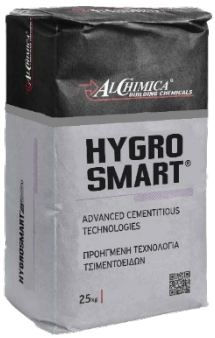
3. **HYGROSMART®-BUILDING-F** (Single-component, reinforced, quick-setting, cementitious repair mortar with excellent adhesion and mechanical properties, easy application in horizontal/vertical substrates. Long pot life allows the application of thick coats without cracking. CE Certified as Class R3 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 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).

HYGRO SMART® SYSTEM Advanced Cementitious Technologies

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.

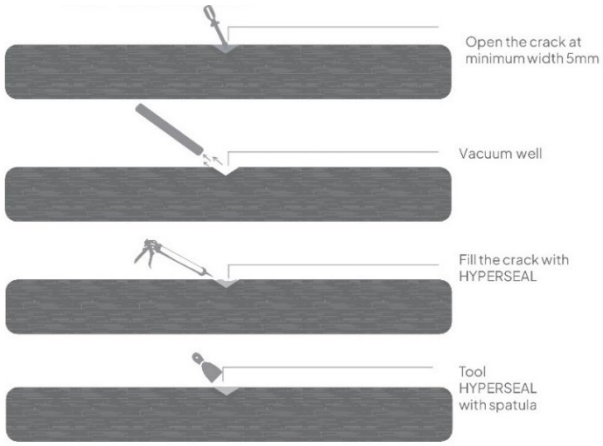
SUBSTRATE AND CONDITIONS	CONCRETE	HUMID CONCRETE	GYPSUM	METAL STEEL	POROUS CERAMIC TILES	GLASS / GLAZY TILES	PVC MEMBRANES	TPO MEMBRANES	BITUMEN MEMBRANES	LOW TEMPERATURE APPLICATION	VAPOR BARRIER	NEGATIVE PRESSURE / RISING HUMIDITY (tanks)
PU PRIMERS												
PRIMER-PU	X	-	-	X	-	-	-	-	-	-	-	-
MICROPRIMER-PU	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

HYPERSEAL®-EXPERT-150 is a low-modulus expansion and construction joints PU sealant designed to ensure a bubble-free cure even in high temperature and humidity conditions. It exhibits excellent thixotropy, making it suitable for large expansion joints. The ratio width to depth should be 2:1 subject to a minimum depth of 10mm. It cures by reacting with atmospheric humidity, producing a joint sealant with a 50% joint movement accommodation factor, elongation >700% (ASTM D412 / EN-ISO-527-3), and excellent adhesion to a variety of substrates (Adhesion to concrete >20 kg/cm^2 (>2 N/mm^2) ASTM D4541) with or without the use of special primers. The sealant's extrusion rate and tooling remain consistent across

various temperature and humidity conditions. HYPERSEAL®-EXPERT-150 is CE certified according to EN 15651-1:2012 (Sealants for Facades) and 15651-4:2012 (Sealants for Floor Joints with Foot



traffic). HYPERSEAL®-EXPERT-150 is a highly flexible PU sealant, with elastic recovery of >70% (EN ISO 7389) allowing for the movement and expansion of structure components, preventing cracks, and ensuring a lasting seal. It adheres to various substrates, making it durable and able to withstand harsh environmental conditions and heavy traffic loads. As a PU sealant, it is also chemically resistant, protecting the structure from corrosion. Because of its excellent chemical and hydrolysis resistance, it is widely used for sealing joints in swimming pools and chemically treated water environments. HYPERSEAL®-EXPERT-150 provides excellent waterproofing, preventing moisture ingress, and has high elasticity, allowing for flexibility and elasticity. It does not shrink as it cures, ensuring no gaps or openings in the sealed joint. Its excellent heat resistance makes it suitable for application where exposure to temperatures >60°C takes place and its resistance to cold allows the sealant to remain elastic even down to -40°C (service temperature range -40 to +80°C). It has tack free time (@ 77°F (25°C) & 55% RH) of 2.5-3.5 hours and a cure rate of 2-3 mm/day, low VOC content, and remains resistant and unaffected by microorganisms, fungi, and algae growth, making it the most versatile PU sealant, usable in a variety of applications.

HYPERSEAL®-EXPERT-150 is available in various colors and compatible with a wide range of construction materials in general. Can be easily applied using standard caulking or gun techniques.

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. The HYPERDESMO® System

remains elastic at -40°C. 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 HYPERDESMO®-ADY-610/810, 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.

GEOTEXTILE-50 (1X200m)

GEOTEXTILE-50 is a non-woven geotextile, from 100% polyester fibers, manufactured with the needle punching process.

COLOR	PACKAGING
WHITE	200m

GEOTEXTILE-50 PRESSED (1.02X100m) (0.17X100m)

GEOTEXTILE-50 PRESSED is a non-woven geotextile, from 100% polyester fibers, manufactured with spun-lacing process (hydro-entanglement).

COLOR	PACKAGING
WHITE	100m
WHITE	100m

GEOTEXTILE-45 PRESSED (1.02X100m)

COLOR	PACKAGING
WHITE	100m²

METHOD STATEMENT

EXPOSED CAR PARK WATERPROOFING BASED ON THE HYPERDESMO®-SYSTEM.

ALCHIMICA's hard traffic, exposed car park system ensures the protection from water-ingress and allows for heavy traffic loads due to its exceptional mechanical properties and high crack-bridging capacity. At the same time, it offers high resistance to chemicals and automotive fluids along with high solar r reflectance for cool roof results and energy efficiency.

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

APPLICATION WITH AIRLESS SPRAY MACHINE.

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.

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*

- 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, clean it, and replace it with HYPERSEAL®.
- ✓ 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.

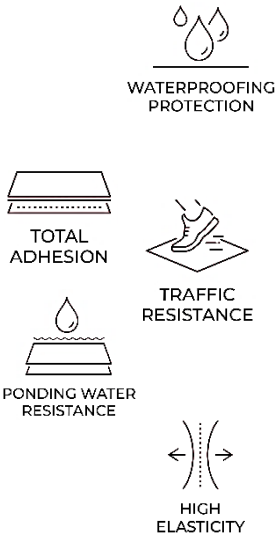
ALCHIMICA advises the thorough testing of the system to be performed prior to proceeding with full surface application in order to determine the suitability of the system based on project requirements.

SYSTEM PRODUCTS BUILD-UP

	PRODUCT	CONSUMPTION
1. PRIMER	AQUASMART-DUR	150-200 gr/m²
	MICROSEALER-50	Subject to porosity
	GEODESMO-50	

CERTIFIED PRODUCTS

2.	SEALANT	HYPERSEAL®-EXPERT-150	Subject to project needs
3.	MAIN WATERPROOFING MEMBRANE	HYPERDESMO SYSTEM	Total consumption: 2.5kg/m^2 Subject to traffic needs
4.	TRAFFIC TOP COAT	HYPER4DSMO-ADY-810	Per coat: 0.8-1 kg/m^2
5.	SILICA SAND & HYPERDESMO-ADY-810 ROLLBACK	recommended granulometry: 0.3-1mm	The consumption of the silica sand for each layer of HYPERDESMO-ADY-810 should be +/-1kg/m2, depending on the sand's granulometry.
6.	STAIN FLOOR PROTECTION & TRAFFIC LINE MARTING (OPTIONAL)	AQUASMART-TC-2K-FLOOR-PTOTECT	Subject to project needs



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 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.

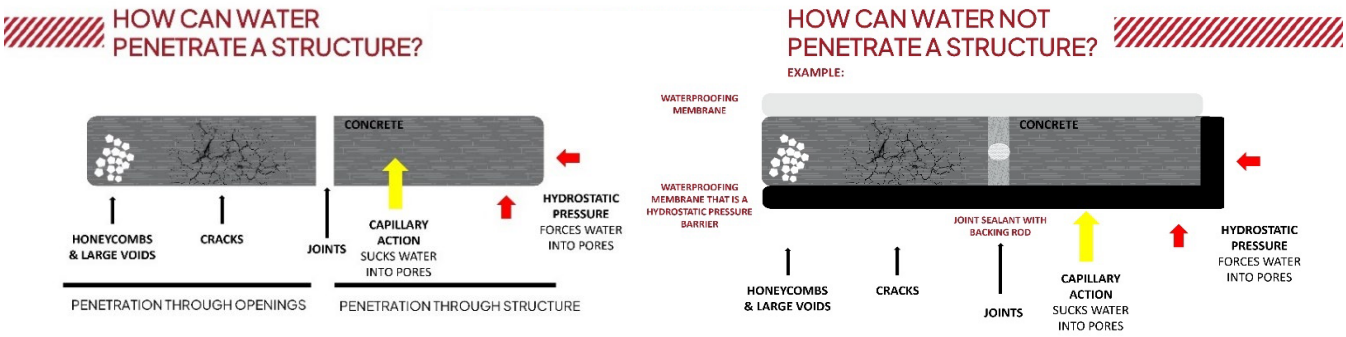
Application: You choose this primer if the concrete surface is extremely porous. GEODESMO-50 has a very fast curing profile (same-day primer), which allows it to be used more successfully in colder climates and when rain is not very predictable because 2-3 hours after this primer application, you can 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 small gaps in structures designed to prevent cracks, absorb stresses, and allow soil movement. They allow independent movement and thermal expansion without inducing stress. Concrete is susceptible to cracks due to its non-elastic nature, so joints are strategically placed to prevent failure. However, structures with expansion joints are susceptible to water leaks, so waterproofing and applying a durable sealant are essential to maintain flexibility and allow the joint to function properly. All dilatation joints, inner angles, wall-floor connections, cracks, drainage details, pipes, and other elements of equipment mechanically installed on the structure (air conditioning, antennas, photovoltaic systems, etc.) must be treated.



Dilatation joints and inner angles should be treated with HYPERSEAL®-EXPERT-150 or HYPERSEAL®-25LM-S, polyurethane based sealants.

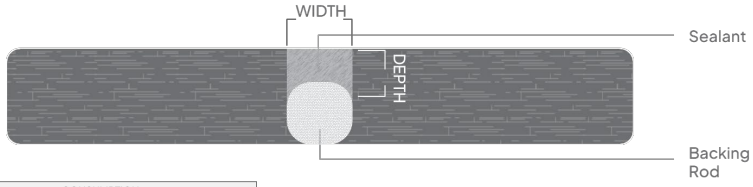
Clean joints thoroughly, and ensure that no dust, oil, grease, wax contaminants, or silicone remains are present. For many applications, primer is not obligatory. However, in case of application on porous or/and wet substrate the primer is required, as there is a possibility of air bubbles blown into the uncured sealant if the substrate temperature rises.

After the primer is cured, apply in dilatation joints the right backing material (where needed) – an open cell polyurethane or a closed cell polyethylene backing rod. Be sure that when applying a closed cell polyethylene backing rod, its outer skin is not punctured, as rising temperature may cause bubbles. Backing rod application is important as it ensures the correct width-to-depth ratio and provides a firm backing against which the sealant can be tooled off. Apply the sealant HYPERSEAL®-EXPERT-150 or HYPERSEAL® 25 LM-S.

■ HYPERSEAL®-EXPERT-150 is a low modulus sealant, formulated to ensure bubble free cure even at very high temperatures and humidity climatic conditions. The product displays excellent thixotropy allowing its use even in very large expansion joints. It cures by reaction with atmospheric humidity to produce a joint sealant with a 50% joint movement accommodation factor and excellent adhesion on many types of substrates (concrete, fibrous cement, mosaic, cement roof tiles, wood, also glass, aluminum,

steel, polycarbonate, etc.). The extrusion rate and tooling of the sealant remain the same throughout a very wide range of temperature and humidity conditions.

■ HYPERSEAL® 25LM-S is a low modulus expansion joint sealant. It has been modified in order to give enhanced thixotropic properties. It cures by reaction with atmospheric humidity to produce a joint sealant with a 50% joint movement accommodation factor and excellent adhesion on substrates traditionally problematic for PU sealants, e.g. glass, aluminum, steel, polycarbonate, etc. Additionally, the sealant has been modified in order to have an extrusion profile identical to hybrid PU or MS technology. The extrusion rate and tooling of the sealant remain the same throughout a very wide range of temperature and humidity conditions. The sealant is easy to apply even in very low temperatures.



CONSUMPTION					
WIDTH / DEPTH	5mm	10mm	15mm	20mm	25mm
5mm	24	12			
10mm			4	3	2,4
15mm					1,6

- Width # depth ratio 2/1
- Minimum width size 5mm

Slide the sealant HYPERSEAL®-EXPERT-150 or HYPERSEAL® 25 LM-S into the sealant dispensing gun, cut off the very end of the sealant packaging, and fit the gun with the nozzle. The nozzle should be cut to deliver the right bead size. Extrude the sealant into the joint ensuring that no air is trapped in the joint. Tooling is recommended immediately after the application of sealant. The ratio width to depth should be 2:1 subject to a maximum depth of 25mm.

NOTE:

- Tool the sealant with a spatula.
- Do not use any solvent, alcohol, or soap to smooth the material.

POLYETHYLENE BACKER ROD

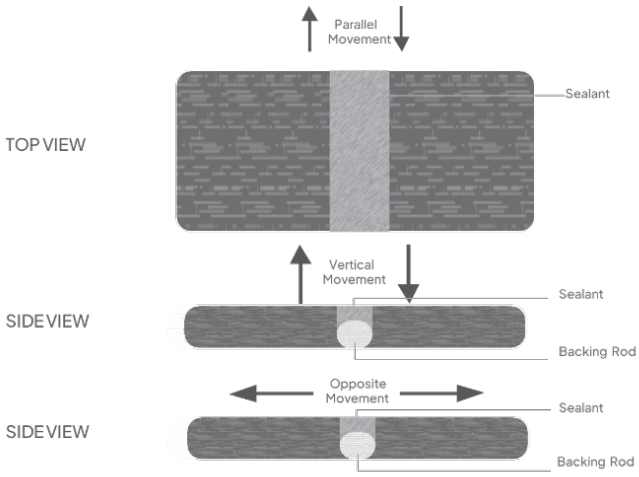
Special backer rod made of extruded polyethylene for joints where HYPERSEAL® sealants will be used.

SIZE	PACKAGING
F6	1500m
F10	680m
F15	250m
F20	180m
F25	100m
F30	100m
F40	100TEM
F50	65TEM

TREATMENT OF DETAILS

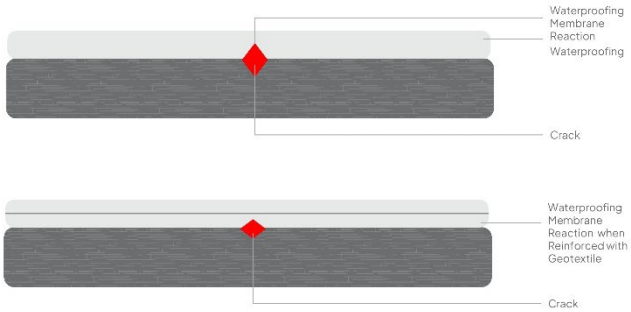
All connections, cracks, drainage details, pipes, and other elements of equipment mechanically installed on the structure (air conditioning, antennas, photovoltaic systems, etc.) should be treated. Select the preferable treatment using sealants HYPERSEAL®-EXPERT-150, HYPERSEAL® 25LM-S, or/and HYPERDESMO® -ADY-610/810 with GEOTEXTILE, or/and HYPERDESMO®-PARTICULAR.

Clean details and cracks thoroughly, and ensure that no dust, oil, grease, wax contaminants, or silicone remains are present. For many applications, primer is not obligatory. However, in case of application on porous or/and wet substrate, the primer is required, as there is a possibility of air bubbles blown into the uncured sealant if the substrate temperature rises. Select a suitable primer according to the substrate type and needs.



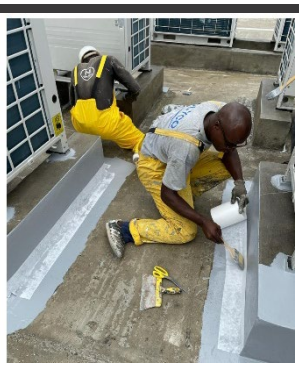
Dilatation joints, inner angles, and small cracks should be treated with HYPERSEAL®-EXPERT- 150 polyurethane-based sealant or any other suitable HYPERSEAL® sealant as described above.

THICKNESS OR TENSILE STRENGTH



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

TREATMENT WITH REINFORCEMENT: HYPERDESMO MEMBRANES WITH GEOTEXTILE.



Cracks and details can also be treated by application of HYPERDESMO® membranes with GEOTEXTILE reinforcement. When the primer is fully cured, treat the details with HYPERDESMO® membranes using a brush or small roller. Apply a piece of GEOTEXTILE (strips 0.17x100m, non-woven geotextile of 50-100gr/m²) cut in proper size, wet on wet, for better protection from cracks in these specific points, if movement happens in the future. After the details treatment has been completed you continue with the application of the full surface waterproofing system.

FIBER-REINFORCED PU: HYPERDESMO®-PARTICULAR.

This is an alternative option when application of HYPERDESMO® System with GEOTEXTILE is difficult. HYPERDESMO®-PARTICULAR is a thixotropic and fiber-reinforced, one component polyurethane liquid membrane used for waterproofing and protection of roof detail structures. Due to its unique formulation, it cures rapidly to form a bubble free thick layer membrane with excellent mechanical properties. HYPERDESMO®-PARTICULAR is an effective sealing material for the treatment of installation details on roofs, such as chimneys, pipes, photovoltaic systems, air-conditioning units, and gutters. This product is ideal for usage during the winter months or in climates with relatively low humidity.

Apply the material with a spatula or a brush with the consumption required to fill in the gaps, but with a thickness of no more than 2 mm. It can be applied as the only sealing material as well as together with HYPERSEAL®-EXPERT-150 or HYPERSEAL® 25 LM-S. In this case, the depth is filled in with sealant HYPERSEAL®-

EXPERT-150, and then the irregularities on the top part are treated with thixotropic HYPERDESMO®-PARTICULAR.

NOTE:

- Clean tools and equipment first with a paper towel and then using SOLVENT-01.

MAIN WATERPROOFING MEMBRANE

When it comes to waterproofing, selecting the appropriate membrane is crucial for ensuring the longevity and effectiveness of your project. The HYPERDESMO® System by ALCHIMICA is a versatile solution that caters to various needs and environmental conditions. With a CE certification and an expected working life of 25 years, this high-performance system not only provides robust waterproofing but also enhances environmental sustainability by offering cool roof performance. This contributes to cooler, healthier environments and better air quality by mitigating the urban heat island phenomenon. In regions with unpredictable climatic conditions, ALCHIMICA's same day waterproofing system based on HYPERDESMO®-H.A.A. can be applied in a single coat, ensuring quick and reliable protection against rain. The above-mentioned recommended system of GEODESMO-50 plus HYPERDESMO®-H.A.A., allows same-day concrete roof waterproofing application. Additionally, other HYPERDESMO® versions, such as LV and HAA, are available and can be utilized based on specific project guidelines provided by ALCHIMICA.

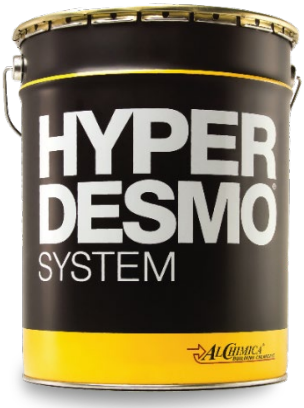
Selecting the correct HYPERDESMO® (-CLASSIC, -LV, -C-LV,-HAA, etc.) membrane involves understanding your project's unique requirements and the local environmental challenges to ensure optimal performance and durability.

HYPERDESMO SYSTEM

HYPERDESMO® SYSTEM	
CONSUMPTION	2.5kg/m²
APPLICATIONS METHODS	brush, roller, airless spraying
TACK FREE TIME, @ 77 °F (25°C) & 55% RH	4-6 Hours
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time

The HYPERDESMO® System is a single-component polyurethane membrane with excellent mechanical, chemical, thermal, and natural element resistance properties. It is suitable for exposed waterproofing applications like concrete roofs, metal roofs, and bitumen membrane refurbishment. The system is the only polyurethane liquid membrane in the world with CE certification at a thickness of 1.2mm without reinforcement. It has excellent adhesion, UV, and thermal resistance, and can achieve over 82% solar reflectance in white. It remains elastic even at -40°C and high temperatures up to +90°C. The system is non-toxic after full cure, has good chemical resistance, and is resistant to hydrolysis. Select the suitable version of HYPERDESMO® for your project requirement that meets your needs.

RECOAT TIME OF PRODUCT	6-24 Hours
NEXT COAT TIME (TOPCOAT)	6-24 Hours
ADDITIVES	• THIXO-TOOL • ACCELERATOR-300A CHECK THE TDS FOR COMPATIBILITY
COLORS	WHITE, GREY, TEJA
COMPONENTS	SINGLE COMPONENT



Mixing: Use a low speed (300 rpm) mixer.

TYPES OF APPLICATIONS

APPLICATION BY COATS

- First coat: 0.8-0.9 kg/m².
- Second coat: 0.8-0.9 kg/m².
- Third Coat: 0.8-0.9 kg/m².

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

- Minimum total consumption: 2.5kg/m².

APPLICATION WITH REINFORCEMENT

✓ GEOTEXTILE
✓ FIBER TEXTILE

You apply the 1st coat of HYPERDESMO® SYSTEM with a minimum consumption of 0.8 kg/m². When HYPERDESMO® System is still wet, you apply the reinforcement (GEOTEXTILE-50 PRESSED (non-woven geotextile of 50gr/m²)). As soon as HYPERDESMO® SYSTEM 1st coat cures, application of the 2nd coat of HYPERDESMO® SYSTEM, with a minimum consumption of 0.8 kg/m² takes place.

SINGLE COAT APPLICATION

HYPERDESMO® SYSTEM can be applied in only 1 single coat, with a maximum consumption of up to 2kg/m² if you add ACCELERATOR-3000A to HYPERDESMO®. For more details refer to the ADDITIVES section below.

NOTE: Adding an accelerator decreases the curing time as well as the pot life of HYPERDESMO®.

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

1. Open the pail and stir it up to homogenize.
2. If necessary, add 5~10% SOLVENT-01 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.

The use of an airless spray machine is not recommended when ACCELERATOR-3000A is added to the material.

TRAFFIC TOP COAT

HYPERDESMO®-ADY 810 is a fully aliphatic, one-component polyurethane liquid membrane designed for use as a waterproofing membrane or as a top coat for heavy duty and high traffic deck coating systems and roofs. It is based on ALCHIMICA's HAA - Humidity Activated Accelerator Technology (H.A.A) and it is self-levelling, with a good viscosity profile over a large temperature range that will cure to form a bubble-free membrane that is recommended to be applied in only one coat.

WATERPROOFING	HYPERDESMO®-ADY-810
CONSUMPTION	1.5-2 kg/m² >2 kg/m² Subject to traffic needs
APPLICATIONS METHODS	brush, roller, airless spraying
TACK FREE TIME, @ 77 ºF (25ºC) & 55% RH	6-12 Hours
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time
RECOAT TIME OF PRODUCT	24 Hours
ADDITIVES	• THIXO-TOOL • CHECK THE TDS FOR COMPATIBILITY
COLORS	WHITE, GREY
COMPONENTS	SINGLE COMPONENT

It is heavy-duty, fully aliphatic, with excellent mechanical, chemical, thermal, UV and natural element resistance properties, excellent abrasion, impact, and UV resistance,

excellent mechanical properties, high elasticity, tensile and tear strength, and excellent chemical and hydrolysis resistance.

Usage for heavy-duty exposed waterproofing applications such as car parking decks and heavy-duty concrete roofs is recommended. The HYPERDESMO®-ADY 810 system is a must-have for top-coating HYPERDESMO® systems when traffic resistance is required, as well as for main membrane and top coat application in one layer in typical heavy-duty waterproofing applications. This 2-in-1 solution eliminates the need for an additional protective layer and saves on labor costs.

For traffic resistance and colour protection you should finally apply a traffic coat of HYPERDESMO-ADY 810 combined with silica sand. Total consumption of HYPERDESMO-ADY 810 should be 1.5-2.0kg/m2 in 2 successive coats over the intermediate waterproofing coat. The consumption of the silica sand for each layer of HYPERDESMO-ADY-810 should be +/-1kg/m2, depending on the sand's granulometry.

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

Application of traffic coat should be as follows – ROLL BACK METHOD:

Apply the first layer of HYPERDESMO-ADY 810 traffic coat at a consumption of 0.75-1 kg/m2 with roller, squeegee, notched trowel or air-less spray machine. Immediately broadcast silica sand (recommended granulometry: 0.3-1mm). Spread the sand as to homogenously cover the total surface. Immediately rollback the surface with roller in order to homogenize the silica sand with HYPERDESMO-ADY 810 and to achieve the above-mentioned consumption. The following day, apply the second layer of traffic coat, repeating the same procedure and consumption of HYPERDESMO-ADY 810, as per first layer.

TYPES OF APPLICATIONS

APPLICATION BY COATS	- First coat: 0.7-0.9 kg/m^2. - Second coat: 0.8-0.9 kg/m^2. Apply more coats depending on traffic requirements and system build-up. - Minimum total consumption: 1.5-1.8 kg/m^2.

SINGLE COAT APPLICATION

HYPERDESMO®-ADY 810 can be applied in only 1 single coat, with a maximum consumption of up to 2kg/m^2.

ANTI-SLIP TRAFFIC COAT WITH SILICA SAND AND HYPERDESMO-ADY 810 – ROLL BACK METHOD

For traffic resistance and color protection, over the main waterproofing layer, you should apply an additional traffic coat of HYPERDESMO®-ADY 810 combined with silica sand.

In general: Total consumption of HYPERDESMO®-ADY 810 should be 1.5-2.0kg/m^2 in 2 successive coats over the intermediate waterproofing coat. The consumption of the silica sand for each layer of HYPERDESMO®-ADY-810 should be +/-1kg/m^2, depending on the sand's granulometry.

Application of traffic coat should be as follows:

1. Apply the first layer of HYPERDESMO®-ADY 810 traffic coat at a consumption of 0.7kg-1kg/m^2 with roller, squeegee, notched trowel or air-less spray machine.
2. Immediately broadcast silica sand (recommended granulometry: 0.3-1mm).
3. Spread the sand as to homogenously cover the total surface.
4. Immediately rollback the surface with roller in order to homogenize the silica sand with HYPERDESMO®-ADY 810 and to achieve the above-mentioned consumption.
5. The following day, apply the second layer of traffic coat, repeating the same procedure and consumption of HYPERDESMO®-ADY 810, as per first layer (0.7kg- 1kg/m^2).

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

6. Open the pail and stir it up to homogenize.
7. If necessary, add 5~10% SOLVENT-01 into the pail and mix it with medium-speed mechanical equipment.
8. Apply thin layers using an airless spray machine.
9. Wait for the recoat time.
10. Repeat this process until the desired or recommended thickness.

PIGMENTATION OF HYPERDESMO®-ADY 810 NEUTRAL

HYPERDESMO®-ADY 810 is either pre-pigmented from the factory in white/grey colour or it comes in NEUTRAL version that must be pigmented with ALCHIMICA's PIGMENT PASTES only (10% max).

At a maximum ratio of 10% by weight, the PIGMENTS PASTES are designed to be compatible with ALCHIMICA's products, offering high hiding power to the neutral versions of HYPERDESMO®-ADY 810. Pour the PIGMENT PASTE content of the pail into the product at a maximum ratio of 10% by weight. Mix thoroughly using a low-speed electric mixer until the product homogenizes. Apply the product as per standard application instructions.

TRAFFIC LINE MARKING

Tires can indeed leave stains on floor substrates due to the oils and chemicals they contain. These substances, including oils and plasticizers designed to keep rubber flexible, can migrate out of the tires and onto the floor over time. This leaching process can cause noticeable discoloration or staining, especially on lighter surfaces. The heat and pressure exerted by vehicles can accelerate this leaching, exacerbating the problem.

AQUASMART-TC 2k FLOOR PROTECT	
CONSUMPTION	0.150 kg/m² per coat In Total: 0.3kg/m² in two or more coats.
APPLICATIONS METHODS	brush, roller, airless spraying
TACK FREE TIME, @ 77 °F (25°C) & 55% RH	-
APPLICATION OVER PREVIOUS COAT	It must be applied WITHIN 24-72 hours, depending on weather conditions.
RECOAT TIME OF THE PRODUCT	When completely dry
POT LIFE	-
COLORS	TRANSPARENT
COMPONENTS	TWO COMPONENTS

To protect floor substrates from tire marks, particularly in parking lots, specific products and application procedures are recommended. One such product is AQUASMART-TC-FLOOR PROTECT, which is effective in shielding the flooring system from tire marks. Traffic lines should be applied using AQUASMART-TC 2K FLOOR PROTECT, pigmented to the desired color, within 48 hours after the final coat of HYPERDESMO-ADY-810. This coating is versatile and can be easily pigmented with various water-based color pastes.

The application process involves using a roller to apply the product at a total consumption of 0.15-0.30 kg/m² in one or two coats. Light pedestrian traffic is permissible after 24 hours, while vehicle traffic should be allowed only after 5 days from the final layer application.

AQUASMART® –TC 2K FLOOR PROTECT is a two-component, water-based, aliphatic coating renowned for its exceptional performance in a multitude of applications. It is highly recommended as a top coat for protecting epoxy and polyurethane self-leveling floors, thanks to its excellent UV, chemical, water, and abrasion resistance. This product also offers superior resistance to staining and can be easily pigmented with off-the-shelf water-based pigment pastes in a 5-10% by weight ratio, depending on the required hiding power.

This product is particularly suitable as a UV protective (pigmented) top coat for self-leveling polyurethane and epoxy floors, serving as a final protective layer for car parks, and for industrial paint applications. Its features and benefits include being water-based, easy to apply, fast curing, and having excellent UV resistance. Additionally, it can be easily pigmented with water-based pigment concentrates, has a long pot life, and provides excellent interlayer adhesion.

By using AQUASMART® –TC 2K FLOOR PROTECT as a top coat, floors can be effectively shielded from the staining effects of tire oils and chemicals, ensuring both longevity and aesthetic appeal.

Mixing: Use a low speed (300 rpm) mixer. Add the second component and continue mixing for a few minutes. Add the pigment paste 5-10% by weight and mix until product has a homogenous color.

Application: Application of AQUASMART®-TC 2K FLOOR PROTECT is straightforward and user-friendly. It is straightforward: mix the two components with a low-speed mixer until a homogenous color is achieved. It can be pigmented with water-based pastes and applied with a roller or spray at a rate of 150-300 grams per square meter in one or two coats. Ensure the first coat is dry before applying the second to avoid defects.

Declaimer: Make sure not to disturb applied material with excessive rolling as roll marks may appear. The material is relatively fast drying and therefore any additional rolling after the first application will cause surface defects to appear. Make sure the first coat is completely dry before second coat is applied.

TYPES OF APPLICATIONS

APPLICATION BY COATS	Per coat: 0.150 kg/m^2. Apply more coats depending on project requirements and system build-up.
PIGMENTATION OF AQUAMSART-TC-2K-POOL PROTECT	The material is easily pigmented by using water-based pigment pastes. At a maximum ratio of 10% by weight, the water-based pigments offer high hiding power to the transparent or white versions of the product. Pour the PIGMENT content of the pail into the product at a maximum ratio of 10% by weight. Mix thoroughly using a low-speed electric mixer until the product homogenizes. Apply the product as per standard application instructions.

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

1. Open the pail and stir it up to homogenize. Stirring can either be done manually or with a low speed (300 rpm) mixer.
2. If necessary, add up to 5% water into the pail and mix it with low-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.

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.

ADDITIVES FOR THE HYPERDESMO® MEMBRANES

ADDITIVES	
THIXO-TOOL	THIXO-TOOL is a unique additive used for Increasing the thixotropy (reducing the self-leveling characteristics) of the HYPERDESMO® System. It was developed by ALCHIMICA in order to solve application difficulties of the HYPERDESMO® System in severely inclined, uneven, or completely vertical substrates.
	The recommended addition ratio is 10-30% depending on the surface inclination, substrate condition, and desired final consumption.
	Open the can of HYPERDESMO® and mix thoroughly before adding THIXO-TOOL. Open the sausage of THIXO-TOOL and empty the desired amount by hand into the pail (leftover material can be sealed and stored for later use). The addition of THIXO-TOOL depends on specific project requirements, but the recommended amount is 10-30%. Mix the THIXO-TOOL with a low-speed mixer, careful not to introduce air. Apply final material as described in the Technical Data Sheet at the time of purchase.
PLEASE REFER TO THE TDS OF THIXO-TOOL TO MAKE SURE WHICH HYPERDESMO PRODUCTS ARE COMPATIBLE WITH THE ADDITIVE.	THIXO-TOOL can be used alongside ACCELERATOR 3000A when the use of the latter is recommended.

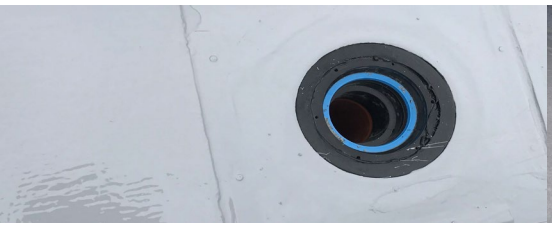
REPAIR, OVERLAPS PROCESSES

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 MICROSEALER-50 at a consumption of 50-60gr/m^2 by overlapping the membrane at the prementioned perimeter.
- Fill the area by using HYPERSEAL®-EXPERT- 150, tool it to form a smooth patch, and the next day apply the same coat and topcoat that was applied to the rest of the membrane waterproofing system (if one was used) in order to ensure long term UV protection of the 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® 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/m² in order to secure adhesion. After 6-12h you can apply the next coat of HYPERDESMO®.
- OPTION 2: solvent wipe the whole area with SOLVENT-01, let it dry, and then apply AQUASMART-DUR primer at 50-80gr/m² in order to secure adhesion. After 3-6h you can apply the next coat of HYPERDESMO®.

MAINTENANCE

a. Surfaces may be cleaned with commercial detergents. ALCHIMICA recommends that a maintenance service contract be established between the project owner and the applicator.

b. Regular inspection and repair of damaged surfaces will considerably prolong the performance and the expected life of the waterproofing system.

c. Portions of the membrane that exhibit wear are considered an item of maintenance and not an item of warranty.

d. All sharp debris such as gravel, sand and metal should be removed on a regular basis to avoid damage to the coating.

e. When removing snow, avoid the use of metal blades or buckets that could damage the coating.

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

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 CAR PARK SOLUTION 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.

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- 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.

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