A COMPLETE STONE CARPET SYSTEM BASED ON HYPERDESMO®-T.

ALCHIMICA® BUILDING CHEMICALS

TABLE OF CONTENTS

WHY CHOOSE ALCHIMICA IN STONE CARPET PROJECTS?

Stone carpets offer a blend of aesthetics and functionality, providing durable and visually appealing flooring solutions for both indoor and outdoor spaces. ALCHIMICA, a leader in the development of polyurethane waterproofing materials, offers specialized products that enhance the performance and beauty of stone carpet applications. Alchimica provides a tailored solution for every aspect of stone carpet installation. The product range includes:

	OUTDOOR	INDOOR
BINDER	HYPERDESMO-T	HYPERDESMO-T-SL
FILLER	HYPERDESMO-T FILLER	HYPERDESMO-T-SL FILLER
VERTICAL	HYPERDESMO-T VERTICAL	HYPERDESMO-T-SL VERTICAL

HYPERDESMO®-T is a standout product in ALCHIMICA'S lineup, known for its transparent finish, high solid content and ability to cure with atmospheric humidity to form a highly hydrophobic, UV-resistant membrane. Its aliphatic nature prevents yellowing and discoloration under sunlight, making it ideal for areas exposed to direct UV rays. The product maintains elasticity even under extreme temperatures, from as low as -40°C to as high as 80°C, and can withstand thermal shocks up to 200°C.

For indoor applications, HYPERDESMO®-T-SL offers a solvent-less, option that still provides a tough, glossy membrane with exceptional mechanical and UV resistance properties. This makes it suitable for residential and commercial spaces where aesthetics and low solvent content are priorities. Both versions are designed to be used without bubbling or shrinking, even when applied in thick layers. This products are designed for ease of application, capable of being applied in any thickness required by the project without the need for frequent reapplications. In stone applications with draining systems underneath, the waterproofing of the substrate is crucial. ALCHIMICA'S HYPERDESMO-SYSTEM® ensures that the substate

beneath the stone carpet remains protected from moisture penetration, thereby enhancing the longevity and maintaining the structural integrity of the installation. This pre-application waterproofing step is critical in preventing water damage and preserving the aesthetic qualities of the stone carpet over time.

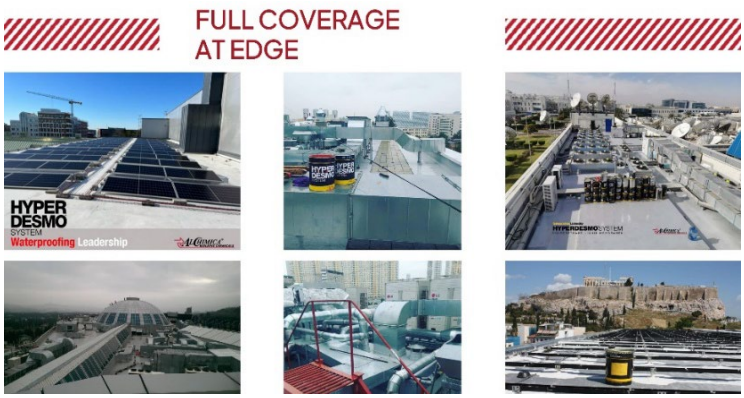
Alchimica's innovative stone carpet systems are not only designed to withstand UV rays and other environmental influences but also ensure that every application, whether on a terrace, balcony, or within an interior space, is durable, aesthetically pleasing, and maintains long-term performance. By choosing Alchimica, clients are assured of a high-quality, durable, and visually appealing flooring solution that meets the varied demands of modern architecture and design.

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.



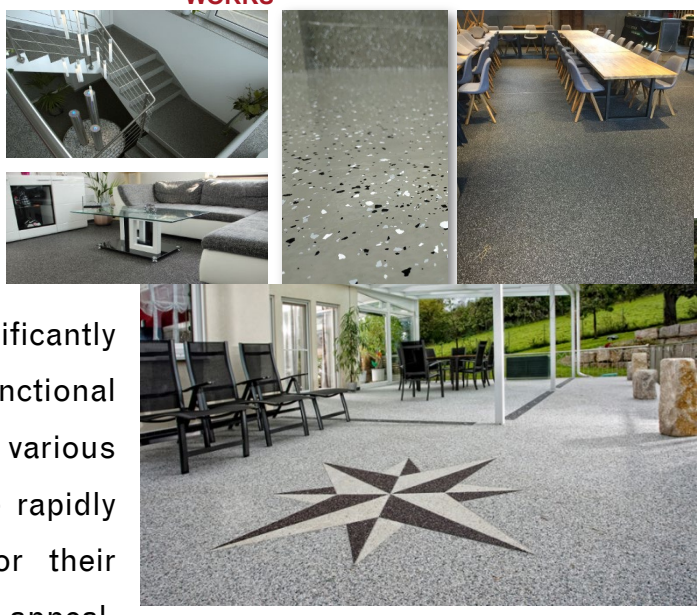
Throughout its history, ALCHIMICA has continuously expanded its range of polyurethane liquid membranes to provide versatile installation alternatives and long-lasting solutions. From one and two-component polyurethane liquid membranes to bitumen-extended polyurethanes, water-based liquid polyurethane 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.

STONE CARPET SYSTEMS: THE MODERN CHOICE FOR DESIGN AND AESTHETIC INNOVATION

AESTHETIC WORKS



In the field of construction and design, the choice of flooring, in indoor and outdoor spaces, significantly influences both the aesthetic and functional aspects of a space. Among the various options available, stone carpets are rapidly becoming the preferred choice for their durability, versatility, and visual appeal. Alchimica, as a leader in polyurethane technology, has developed advanced stone carpet systems based on transparent PU-based products, that cater to diverse settings, ensuring optimal performance and client satisfaction across a spectrum of construction professionals including contractors, developers, architects, engineers, and product distributors.

Stone carpets are a type of flooring that incorporates small, naturally occurring stones or pebbles embedded in a resin (usually PU-based), creating a textured and visually appealing surface suitable for indoor and outdoor use. Stone carpets are popular due to their durability, aesthetic appeal, and natural feel. The main components of a stone carpet are the stones or pebbles and a binding resin. The stones can be natural, synthetic, or a combination of both and they can be installed by mixing the stones with the binding material and spreading the mixture over a prepared surface. They come in a variety of colors and stone types, allowing for customization to suit aesthetic needs and preferences.

Stone carpets are versatile and can be used in residential homes, commercial spaces, gardens, pathways, and wet areas. They are durable, easy to clean, and provide a unique tactile experience. They can also be used with underfloor draining systems when applied over a waterproof substrate.

The cost can vary depending on factors such as the type of stones used, the size of the area covered, and the complexity of the installation process. Generally, they are

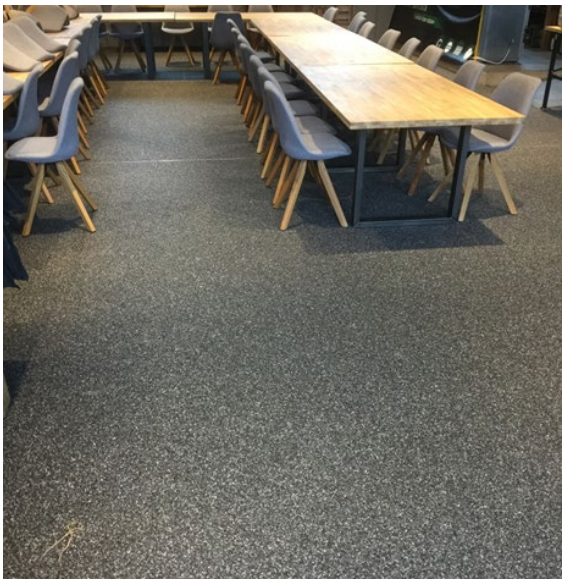
more expensive than traditional carpeting but are a popular choice due to their durability, aesthetic appeal, and versatility. Consult with professionals in the flooring or construction industry for guidance on your specific needs and aesthetic preferences.

On the other hand, Polyurethane stone carpet flooring is an exceptionally versatile and durable option that effectively combines natural stones or aggregates with polyurethane resin to create a visually appealing surface. The key decorative elements are the natural stones or aggregates, available in various colors and sizes, which can be customized to meet specific design preferences. The polyurethane resin acts as a binding material, forming a strong and flexible bond once cured. The installation process is straightforward, involving the mixing of the stones with the resin, spreading, and leveling the mixture over a prepared surface, and allowing it to set and cure. This method provides a natural, textured appearance that is not only aesthetically pleasing but also highly durable, resisting wear, impact, and other forms of damage. Additionally, polyurethane stone carpet flooring is easy to maintain, requiring only regular sweeping, vacuuming, and occasional damp mopping. Suitable for both indoor and outdoor settings, it offers a comfortable underfoot experience due to the combination of natural stones and flexible resin. Some polyurethane stone carpet products are also low in solvent context, making them ideal for indoor applications. Selecting a high-quality, PU-based binder, such as Alchimica's HYPERDESMO®-T, is crucial to maintain the transparent color of the carpet and ensure the longevity and performance of the flooring. Alchimica’s HYPERDESMO®-T system is specifically formulated to optimize both durability and aesthetic appeal, maintaining the vibrant and natural look of the stone aggregates over time. This binder is fully transparent and aliphatic, making it exceptionally suitable for applications like stone carpet systems in outdoor or indoor areas where maintaining the aesthetic integrity of the stone’s natural color and texture is essential. This allows for creative freedom in durable and sustainable projects.

However, specific product features, installation methods, and maintenance recommendations may vary. It is advisable to consult with professionals in the flooring industry and follow the manufacturer's guidelines for installation and maintenance.

TYPES OF STONE CARPET SYSTEMS OFFERED BY ALCHIMICA

Stone carpets by ALCHIMICA are exceptionally versatile, suitable for residential homes, commercial spaces, gardens, pathways, and even wet areas. These systems are developed to be used with underfloor draining systems when applied over a waterproof substrate, enhancing their utility in diverse environments. Whether it's a bustling commercial area or a serene residential space, stone carpets offer an optimal aesthetic appeal.



INDOOR STONE CARPETS

Indoor stone carpets provide an innovative and stylish flooring solution that complements the interior design of residential and commercial spaces alike. Utilizing Alchimica's HYPERDESMO-T system, these carpets are made from a blend of natural or synthetic stones embedded in a polyurethane resin. Indoor stone carpets offer durability and ease of maintenance while they can seamlessly integrate into various decor styles, providing a unique texture and a custom look through extensive color and stone type options. This makes them a versatile choice for enhancing the ambiance of offices, homes, and commercial venues, adding a touch of natural elegance.

OUTDOOR STONE CARPETS

Outdoor stone carpets are an excellent choice for enhancing the external spaces of any property, from residential terraces to commercial pathways. Utilizing Alchimica's HYPERDESMO-T, these durable flooring solutions are specifically designed to withstand the harsh elements of outdoor environments. HYPERDESMO-T, the transparent polyurethane resin used in these systems, offers exceptional UV resistance and thermal stability, capable of enduring temperatures ranging from -40°C to 80°C. This resilience makes outdoor stone carpets ideal for areas exposed to intense sunlight, heavy rain, and fluctuating temperatures. Available in a variety of colors and stone types, they allow for extensive customization to match the architectural style and landscape design of the surrounding area. Moreover, their non-slip texture enhances safety in wet conditions, making them a practical and aesthetically pleasing choice for pool decks, balconies, and other outdoor living spaces.

STONE CARPETS WITH DRAINING SYSTEMS

Stone carpets with draining systems offer a specialized solution to the challenges presented by water exposure, making them ideal for both indoor and outdoor settings where moisture is present. Alchimica's advanced systems include highly effective draining solutions that play a critical role in maintaining the flooring's integrity and longevity. These systems are particularly beneficial in wet areas such as swimming pools, spas, bathrooms and other areas susceptible to water accumulation. The permeability of these stone carpets allows for efficient water drainage, preventing the formation of puddles and reducing the risk of slips and structural damage. This

drainage capability not only enhances safety by providing a stable surface underfoot but also protects the substrate from water damage that can cause deterioration over time. Incorporating draining systems into stone carpet installations ensures that the flooring remains functional and aesthetically appealing, especially in moisture-rich environments. When stone carpets are installed with these draining systems, it is crucial to also apply a waterproofing system to the substrate beforehand. HYPERDESMO-SYSTEM® plays a crucial role in this process, protecting the substrate from moisture penetration which enhances the longevity and structural integrity of the stone carpet installation. This preventive measure is essential to avoid water damage and maintain the visual appeal of the stone carpet over time.

THE KEY ADVANTAGES OF ALCHIMICA STONE CARPET SYSTEMS

ALCHIMICA's stone carpet systems are an ideal choice for both residential and commercial flooring applications due to their durability, longevity, aesthetic flexibility, and environmental compatibility. The combination of high-quality natural or synthetic stones and polyurethane binders creates a flooring system that withstands heavy foot traffic, resists wear and tear, and is suitable for both high-traffic commercial areas and residential settings. Aesthetic flexibility is another significant advantage, as clients can choose from a wide range of colors, textures, and stone sizes to perfectly match the architectural and design requirements of any space. This adaptability makes Alchimica's stone carpet systems a versatile and comprehensive flooring solution, capable of meeting the varied demands of modern construction and design.

ALCHIMICA also offers the option to choose between installations with or without draining systems, providing tailored solutions based on the specific requirements of the project environment. For areas prone to moisture, Alchimica offers stone carpet systems with integrated draining capabilities, which facilitate quick water runoff, preventing puddling and water damage over time. This feature enhances the durability of the floor under wet conditions and makes it safer by reducing the risk of slips and falls due to standing water. Also, provides stone carpet options without draining systems, ideal for areas where the focus is on aesthetics and foot traffic resistance without the need for specialized water management. These systems tend to have a smoother finish, maintaining the natural beauty and feel of the stone carpet while still offering the same level of durability and ease of maintenance.

Environmental compatibility is another significant advantage of Alchimica's stone carpet systems. Their products feature low solvent or solvent-less binders that minimize volatile organic compound (VOC) emissions. Installation and maintenance are easy, requiring only regular cleaning with simple detergents or high-water pressure, reducing long-term maintenance costs. The installation process involves mixing the stones with polyurethane resin and evenly spreading this mixture over a prepared substrate, which requires professional handling to ensure the best outcome. Thermal and UV resistance is another advantage of Alchimica's stone carpets, particularly in outdoor formulations, which can withstand extreme temperatures and prolonged UV exposure. Technical support and expertise from Alchimica ensure that each flooring project is executed to the highest standards, satisfying all stakeholders involved.

Alchimica's stone carpet systems offer a comprehensive flooring solution that meets the demands of modern construction, providing functionality, beauty, and durability in a single product line. Choosing Alchimica’s stone carpet systems means opting for a flooring solution that offers durability, aesthetic flexibility, and environmental friendliness. Suitable for a wide array of applications, these systems not only meet the

functional demands of modern architecture but also cater to the creative aspirations of those involved in building design. Whether for a residential balcony or a commercial pathway, Alchimica provides a comprehensive range of products that ensure long-term performance and aesthetic coherence in any project.

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

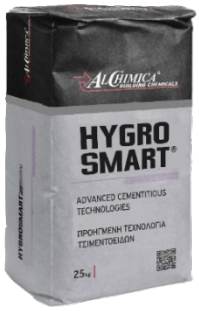
In case any spots on the concrete surface require repairs, filling, and/or smoothing such as large cracks, cavities, or surface levelling, ALCHIMICA's HYGROSMART® range of cementitious mortars may be used:

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 (≤4m/s)
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

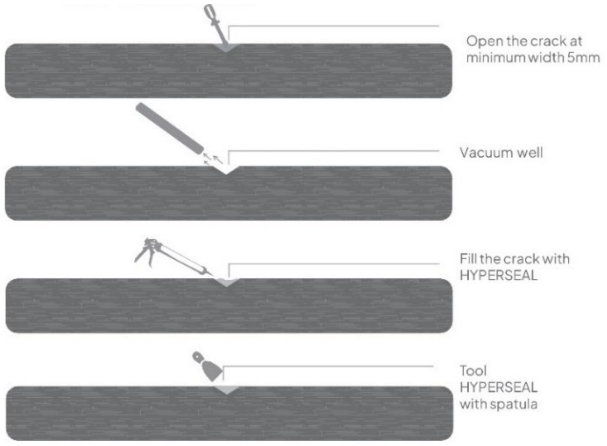
HYPERSEAL®-EXPERT-150 is a low-modulus expansion and construction joints PU sealant designed to ensure a bubble-free cure even in high temperature and humidity conditions. It exhibits excellent thixotropy, making it suitable for large expansion joints. The ratio width to depth should be 2:1 subject to 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/cm² (>2 N/mm²) 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.



UNSOUND SURFACES AND DETAILS

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 -40ºC. 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® 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.

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

STONE CARPET SYSTEMS

	EXPOSED STONE CARPET	INDOOR STONE CARPET
WATERPROOFING FOR DRAINING SYSTEMS		
1. PRIMER	MICROSEALER-50/GEODESMO 50	UNIVERSAL-PRIMER-2K-4060
	AQUASMART-DUR	AQUASMART-DUR/ AQUASMART-PU PRIMER 2K
2. SEALANT	HYPERSEAL-EXPERT-150,	HYPERSEAL-EXPERT-150,
3. WATERPROOFING MEMBRANE	HYPERDESMO SYSTEM (CLASSIC, -LV, -C-LV,- HAA)	HYPERDESMO-ZERO
		AQUASMART-PU- 2K
STONE CARPET SYSTEMS		
HORIZONTAL SURFACES	HYPERDESMO-T, (HYPERDESMO-T FILLER optional)	HYPERDESMO-T SL, (HYPERDESMO-T SL FILLER optional)
VERTICAL SURFACES	HYPERDESMO-T VERTICAL	HYPERDESMO-T SL VERTICAL
STONE GRANULOMETRY		
	Horizontal Surfaces: Marble granules 1-4mm Cullet granules 2-4mm and 4-8mm Quartz pebbles with grain sizes up to 4-8 mm **Vertical Surfaces:** Marble granules 1-4mm Cullet granules 2-4mm Quartz pebbles with grain sizes up to 2-4 mm	**Horizontal Surfaces:** Marble granules 1-4mm Cullet granules 2-4mm and 4-8mm Quartz pebbles with grain sizes up to 4-8 mm **Vertical Surfaces:** Marble granules 1-4mm Cullet granules 2-4mm Quartz pebbles with grain sizes up to 2-4 mm

If Waterproofing Is Not Required, Then After Primming The Substate Prosed With The Stone Carpet System Application.

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
- Smoothing agent: Detergent-water mixture and Solvent-01
- Note: Setting agents (Cabosil) may be added for vertical surfaces.

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*

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

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 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, 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

A. EXPOSED STONE CARPET

	EXPOSED STONE CARPET	CONSUMPTION
WATERPROOFING FOR DRAINING SYSTEMS		
4. PRIMER	MICROSEALER-50/GEODESMO 50	150-200 gr/m^2
	AQUASMART-DUR	Subject to porosity
5. SEALANT	HYPERSEAL-EXPERT-150,	Subject to project needs
6. WATERPROOFING MEMBRANE (OPTIONAL)	HYPERDESMO SYSTEM (CLASSIC, -LV, -C-LV,- HAA)	Total consumption: 1,6 -2 kg/m^2

STONE CARPET SYSTEMS		
HORIZONTAL SURFACES	HYPERDESMO-T, (HYPERDESMO-T FILLER optional)	- 6 mm layer: approx. 14 kg/m² granules + 1.12 kg/m² binder - 8 mm layer: approx. 18 kg/m² granules + 1.44 kg/m² binder
VERTICAL SURFACES	HYPERDESMO-T VERTICAL	- 6 mm layer: approx. 14 kg/m² granules + 1.4 kg/m² binder - 8 mm layer: approx. 18 kg/m² granules + 1.8 kg/m² binder
STONE GRANULOMETRY		
Horizontal Surfaces: Marble granules 1-4mm Cullet granules 2-4mm and 4-8mm Quartz pebbles with grain sizes up to 4-8 mm Vertical Surfaces: Marble granules 1-4mm Cullet granules 2-4mm Quartz pebbles with grain sizes up to 2-4 mm		

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.

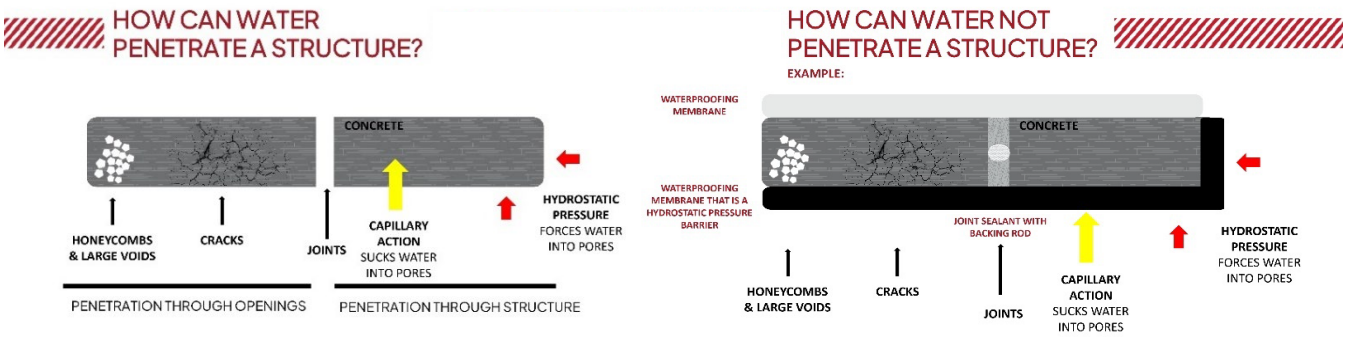
Application: You choose this primer if the concrete surface is extremely porous. GEODESMO-50 has a very fast curing profile (same-day primer), which allows it to be used more successfully in colder climates and when rain is not very predictable because 2-3 hours after this primer application, you can 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 a roof (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.

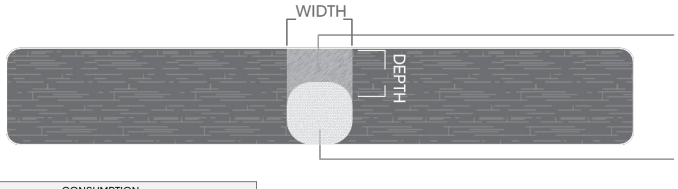
Clean joints thoroughly, and ensure that no dust, oil, grease, wax contaminants, or silicone remains are present. For many applications, primer is not obligatory. However, in case of application on porous or/and wet substrate the primer is required, as there is a possibility of air bubbles blown into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

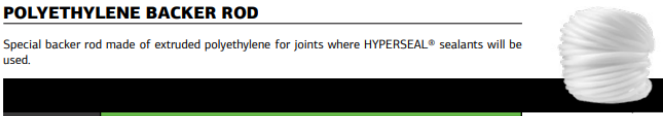
Slide the sealant HYPERSEAL®-EXPERT-150 or HYPERSEAL® 25 LM-S into the sealant dispensing gun, cut off the very end of the sealant packaging, and fit the gun with the nozzle. The nozzle should be cut to deliver the right bead size. Extrude the sealant into the joint ensuring that no air is trapped in 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.



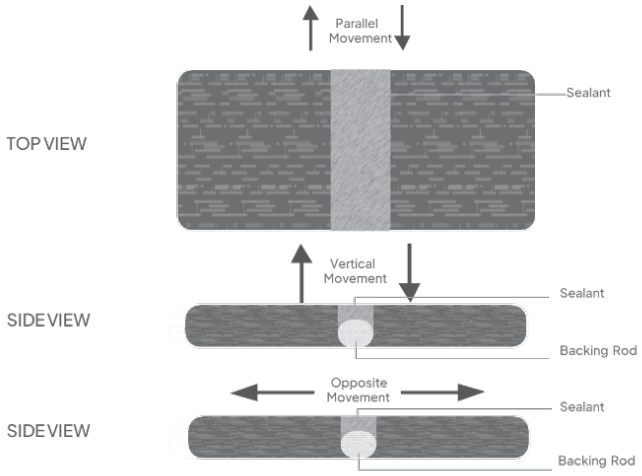
SIZE	PACKAGING
F6	1500m
F10	680m
F15	250m
F20	180m
F25	100m
F30	100m
F40	100TEM
F50	65TEM

TREATMENT OF DETAILS

All connections, cracks, drainage details, pipes, and other elements of equipment mechanically installed on a roof (air conditioning, antennas, photovoltaic systems,

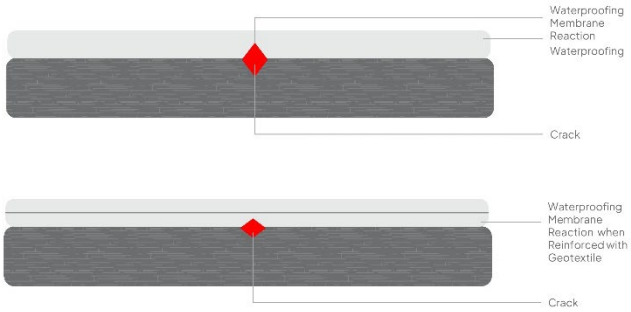
etc.) should be treated. Select the preferable treatment using sealants HYPERSEAL®-EXPERT-150, HYPERSEAL® 25LM-S, or/and HYPERDESMO® System with GEOTEXTILE, or/and HYPERDESMO®-PARTICULAR.

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.



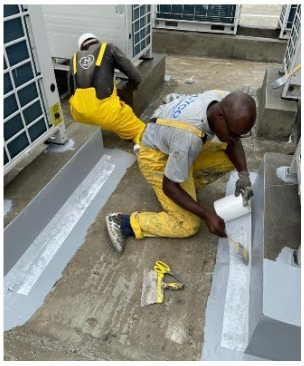
Dilatation joints, inner angles, and small cracks should be treated with HYPERSEAL®-EXPERT- 150 polyurethane-based sealant or any other suitable HYPERSEAL® sealant as described above.

THICKNESS OR TENSILE STRENGTH



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

TREATMENT WITH REINFORCEMENT: HYPERDESMO® SYSTEM with GEOTEXTILE.



Cracks and details can also be treated by application of HYPERDESMO® System with GEOTEXTILE reinforcement. When the primer is fully cured, treat the details with HYPERDESMO® SYSTEM using a brush or small roller. 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. 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.

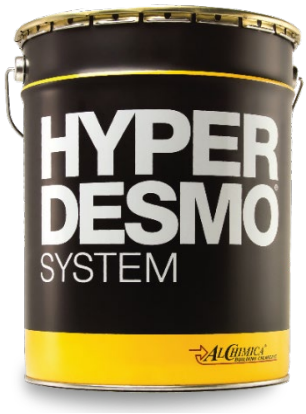
NOTE:

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

MAIN WATERPROOFING MEMBRANE (OPTIONAL)

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.

HYPERDESMO® SYSTEM	
CONSUMPTION	1.5-1.8 kg/m²
APPLICATIONS METHODS	brush, roller, airless spraying
TACK FREE TIME, @ 77 ºF (25ºC) & 55% RH	4-6 Hours
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time
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: 0.7-0.9 kg/m².
- Second coat: 0.8-0.9 kg/m².

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

- Minimum total consumption: 1.5-1.8 kg/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.

APPLICATION WITH BROADCASTING SAND

Silica sand can be broadcasted over the ALCHIMICA topcoat that is used in order to protect the HYPERDESMO® SYSTEM waterproofing membrane. Check more details in the TOPCOAT section below.

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.

EXPOSED STONE CARPET SYSTEM

Stone carpet systems that require both horizontal and vertical applications, such for example the application on stairs, must start the application process from the vertical surfaces, covering all the area, and then follow the application on the horizontal surfaces. In the curing process, the thickness may change and the connection between the two surfaces must stay invisible. This can only be achieved in the following order of application.

First : Application of Stone Carpet Mixture on Vertical

Second: Application of Stone Carpet Mixture on Horizontal

One of the advantages ALCHIMICA's stone carpet system offers is the option to choose to apply a drainage system if needed or not. The stones used in the stone carpet system retain drainage properties and offer anti-slip properties to the surface. Water that enters under the stone carpet system, follows the slope of the substrate, and finally ends up in the drain. Even with standing water, no frost damage is to be expected since thermal loads have no surface to attack due to flexibility and open porosity.

For the pore filler option, ALCHIMICA offers the HYPERDESMO-T FILLER. This material can be applied as a gap filler for stone carpets with a consumption of 0,3-1 Kg/m2 depending on the gaps to be filled. Apply by rubber spatula for filling and finish off by roller for the final finish.

A.1. EXPOSED STONE CARPET ON HORIZONTAL SURFACES

HYPERDESMO-T is a transparent and fully aliphatic polyurethane liquid waterproofing membrane and stone carpet binder for horizontal surfaces. It is a single-component, high-solids polyurethane fluid that cures

with the humidity in the atmosphere with excellent mechanical, chemical, thermal, UV, and natural element resistance properties. HYPERDESMO-T is ideal as a binder for stone carpets on horizontal surfaces.

The previously primed, sealed, and waterproofed horizontal area can be edged with profiles. The mixing ratio of Hyperdesmo T to the stones used should be around 8% by weight. For the mixing process, you need a slow-speed drill (approx. 200-300 rpm), a digital scale (min. 30 kg), and a clean bucket (capacity depending on the previous one calculated consumption).

Weigh the previously calculated stones in the bucket and enter the required portion of Hyperdesmo T. Mix the material well for at least 3 minutes until a homogeneous mass is formed, and the stones are completely enclosed and covered with the binder.

Ready-to-use stone carpet mixture:

(Note: Values may vary)

- 6 mm layer: approx. 14 kg/m² granules + 1.12 kg/m² binder
- 8 mm layer: approx. 18 kg/m² granules + 1.44 kg/m² binder

If possible, remove the finished mixture completely from the bucket and place it on the surface to be worked on. First, wet a stainless-steel smoothing trowel or the tool of your choice with the smoothing agent, or carry SOLVENT 01 with a rag on it. Firstly, spread the stone carpet mixture over the surface. Now start to spread the mixture while smoothing and compacting it to the surface and make sure that you wet your tool with the smoothing agent from time to time to avoid smearing. A previously cut angle profile can be used to check the layer thickness. Make sure that there are no holes or trowel marks. Using a flashlight can help to identify bumps to immediately repair them. Repeat the smoothing process until the surface meets your aesthetic needs and requirements.

A.2. EXPOSED STONE CARPET ON VERTICAL SURFACES

HYPERDESMO-T VERTICAL is a thixotropic, transparent, and fully aliphatic polyurethane liquid waterproofing membrane and stone carpet binder for vertical surfaces. It is a single-component, high-solids polyurethane fluid that cures with the humidity in the atmosphere with excellent mechanical, chemical, thermal, UV, and natural element resistance properties. HYPERDESMO-T VERTICAL is ideal as a binder for stone carpets on vertical surfaces.

The vertical surface should be previously primed and sealed, or waterproof if needed. The surface must therefore be pre-coated with HYPERDESMO-T VERTICAL to secure adhesion. In the vertical area, work is done wet-on-wet. The vertical area can be edged with profiles. The mixing ratio of Hyperdesmo-T VERTICAL to the stones used should be around 10% by weight. For the mixing process, you need a slow-speed drill (approx. 200-300 rpm), a digital scale (min. 30 kg), and a clean bucket (capacity depending on the previous one calculated consumption).

Weigh the previously calculated stones in the bucket and enter the required portion of Hyperdesmo T VERTICAL. Mix the material well for at least 3 minutes until a homogeneous mass is formed, and the stones are completely enclosed and covered with the binder.

Ready-to-use stone carpet mixture:

(Note: Values may vary)

- 6 mm layer: approx. 14 kg/m² granules + 1.4 kg/m² binder
- 8 mm layer: approx. 18 kg/m² granules + 1.8 kg/m² binder

To further increase the stability and viscosity of the mixture and thus to further simplify the vertical application, a thickening agent can be added and mixed with the stone carpet mixture.

Add up to 0.4% Cabosil thickening agent (according to the weight of the finished mixture) to thicken the mixture. This is recommended for surfaces with a height > 10 cm. Simply add the powder suspending agent to the mixture that has already been mixed. Mix again for at least 2 minutes until the thickening agent cannot be seen.

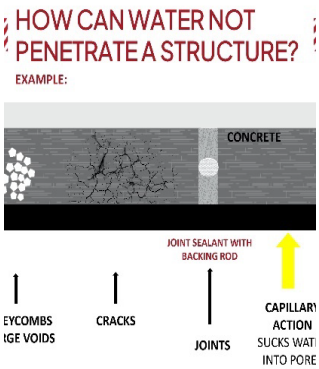
Remove the finished mixture from the bucket and place it lengthwise in front of the working surface. First, wet a stainless-steel smoothing trowel or the tool of your choice with a smoothing agent, or carry SOLVENT 01 with a rag on it. Then press the stone carpet mix against the primed wall. Pull the material from bottom to top with pressure. For smoothing make sure that you wet your tool with the smoothing agent. Keep the tool always wet to avoid smearing, otherwise, the material could pull away from the wall.

Make sure that there are no holes or trowel marks. Using a flashlight can help to identify bumps to immediately repair them. Repeat the smoothing process until the surface meets your aesthetic needs and requirements.

B. INDOOR STONE CARPET

	EXPOSED STONE CARPET	INDOOR STONE CARPET
WATERPROOFING FOR DRAINING SYSTEMS		
1. PRIMER	UNIVERSAL-PRIMER-2K-4060 AQUASMART-DUR AQUASMART-PU PRIMER 2K	150-200 gr/m^2 Subject to porosity
2. SEALANT	HYPERSEAL-EXPERT-150,	Subject to project needs
3. WATERPROOFING MEMBRANE	HYPERDESMO-ZERO AQUASMART-PU- 2K	Total consumption: 1,6 -2 kg/m^2
STONE CARPET SYSTEMS		
HORIZONTAL SURFACES	HYPERDESMO-T SL, (HYPERDESMO-T SL FILLER optional)	- 6 mm layer: approx. 14 kg/m² granules + 1.12 kg/m² binder - 8 mm layer: approx. 18 kg/m² granules + 1.44 kg/m² binder
VERTICAL SURFACES	HYPERDESMO-T SL VERTICAL	- 6 mm layer: approx. 14 kg/m² granules + 1.4 kg/m² binder - 8 mm layer: approx. 18 kg/m² granules + 1.8 kg/m² binder
STONE GRANULOMETRY		
Horizontal Surfaces: Marble granules 1-4mm Cullet granules 2-4mm and 4-8mm Quartz pebbles with grain sizes up to 4-8 mm Vertical Surfaces: Marble granules 1-4mm Cullet granules 2-4mm Quartz pebbles with grain sizes up to 2-4 mm		

SUBSTRATE PRIMING



PRIMER	AQUASMART-DUR / AQUADUR	AQUASMART-PU PRIMER 2K	UNIVERSAL PRIMER-2K-4060
CONSUMPTION	- 150-200 gr/m² - water/humidity barrier –three coats with total cons. of 500-600 gr/m²	- 150-200 gr/m² per coat	- 150-200 gr/m² per coat - subject to substrate porosity
COMPOSITION	WATER BASED EPOXY	WATER BASED PU	100% SOLIDS PU
APPLICATIONS METHODS	brush, roller	brush, roller	brush, roller
TACK FREE TIME, @ 77 °F (25°C) & 55% RH	3-5 Hours	1-2 Hours	1-2 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	1-2 Hours	1-2 Hours
NEXT COAT TIME (HYPERDESMO® ZERO MEMBRANE)	Once the colour on the current coat goes from milky white to transparent 6-24 Hours	2-24 Hours	3-6 Hours
RECOMMENDED DILUTION	10% WATER	10% WATER	5-10% SOLVENT-O1
ADDITIVES	X	X	X
COLORS	TRANSPARENT	TRANSPARENT	TRANSPARENT
POT LIFE	1 Hour	25 min	20-30min
COMPONENTS	TWO COMPONENTS	TWO COMPONENTS	TWO COMPONENTS

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)

■ AQUASMART®-PU PRIMER 2K is a revolutionary polyurethane water-based primer. It is a 100% polyurethane product that can be applied on damp concrete, making it an ideal same-day primer. The product is solvent-free and zero VOC, making it suitable for both indoor and outdoor use. This two-component, 1:1 volume product is fast curing, low-odor, safe, non-flammable, and non-IMO, suitable for closed spaces. It has a long pot life, easy clean-up, and strong adhesion, even on damp or green concrete. It can be used on concrete, humid concrete, metal/steel, aluminum, glass, and wood and can be applied with brush, roller, or airless spraying. The product is recommended for use as a primer for HYPERDESMO® and AQUASMART® based products and for difficult main coat applications like POLYUREA-based materials.

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

Application: You choose this primer when the application temperature is below 15°C and when you need a fast-curing primer that will allow same day application. Apply with roller in one or two thin coats with total consumption of 150 gr/m². Following application of AQUASMART-PU PRIMER 2K, the main membrane may be applied within 2-24 hours.

■ UNIVERSAL PRIMER-2K-4060 is a fast-curing polyurethane primer that allows same-day application for both primer and main coat membrane. It is ideal for cold weather or low humidity conditions, as its curing time is not significantly affected by climate making it suitable for use in cold climates or low humidity conditions. The 100% polyurethane product can be applied on damp concrete and performs excellent adhesion to various surfaces (exceeding the requirements of EOTA). It is non-toxic and has zero VOC. The product is an excellent bitumen-oil barrier and is solvent-less, making it suitable for closed spaces.

Mixing: Mix the two components well manually or using a low speed (300 rpm) mixer. Mix the two components well. In high temperatures, pour mixture in shallow, wide container in order to increase pot life.

Application: You choose this primer when you need an effective oil barrier and a fast curing, solventless PU primer. UNIVERSAL PRIMER-2K-4060 is an ideal solution when working over old concrete surfaces contaminated by oils, grease etc., because it creates a very effective "oil barrier" film that protects the new coating. UNIVERSAL PRIMER-2K-4060 is solvent free and zero VOC primer and suitable for both indoors and outdoors applications. Apply with brush or roller in thin coat with total

consumption not exceeding 200 gr/m². In order to achieve such a small consumption, you can dilute UNIVERSAL PRIMER-2K-4060 with 5-10% of SOLVENT-01 (After thinning the product no longer has zero VOC). Main coat must be applied maximum 6 hours after primer application.

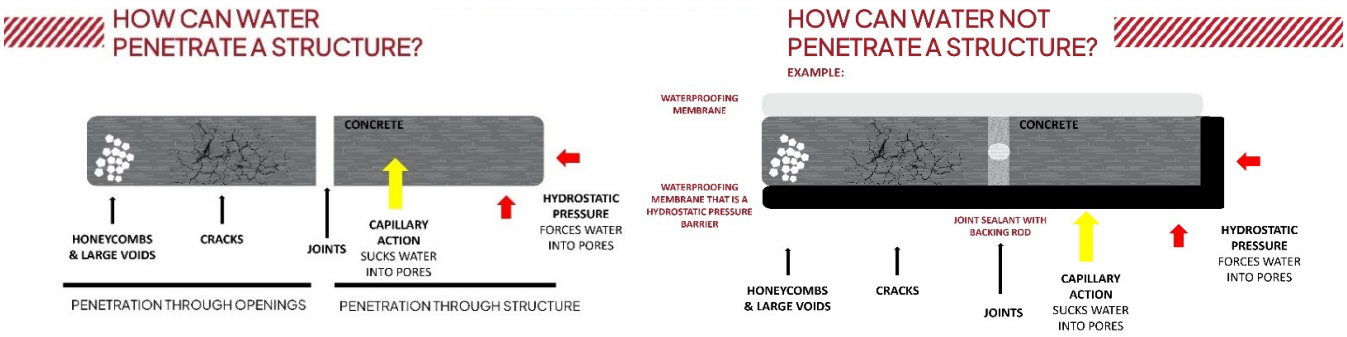
Tip: For increased pot life and/or reduced consumption, add 5-10%. Empty mixed pail contents either in a shallow container or directly on the surface to be primed in order to increase the pot life further.

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

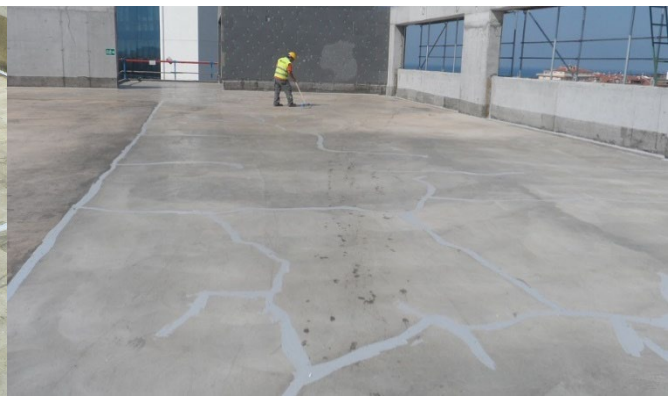
Concrete expansion joints are small gaps in structures designed to prevent cracks, absorb stresses, and allow soil movement. They allow independent movement and thermal expansion without inducing stress. Concrete is susceptible to cracks due to its non-elastic nature, so joints are strategically placed 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 a roof (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.

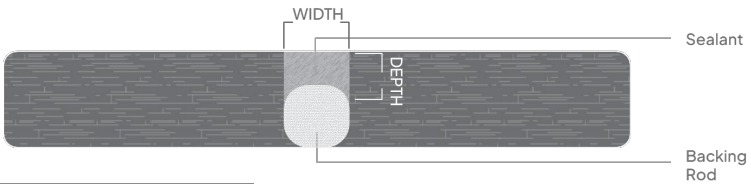
Clean joints thoroughly, and ensure that no dust, oil, grease, wax contaminants, or silicone remains are present. For many applications, primer is not obligatory. However, in case of application on porous or/and wet substrate the primer is required, as there is a possibility of air bubbles blown into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

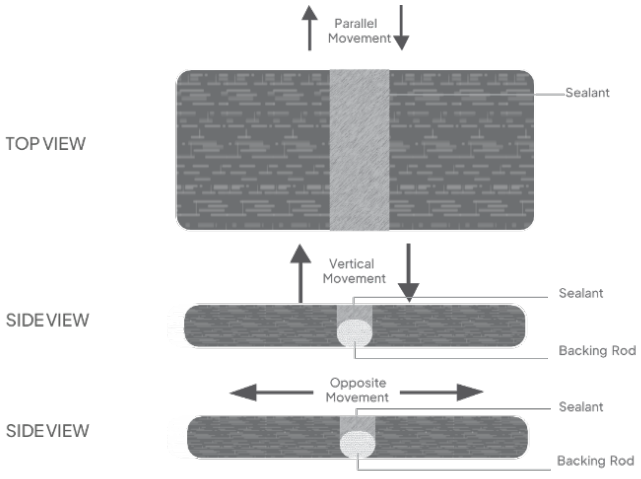
Special backer rod made of extruded polyethylene for joints where HYPERSEAL® sealants will be used.

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

TREATMENT OF DETAILS

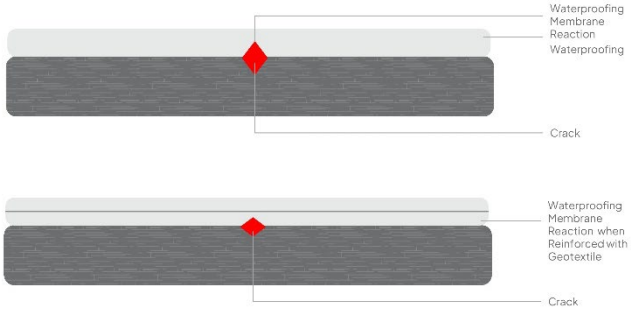
All connections, cracks, drainage details, pipes, and other elements of equipment mechanically installed on a roof (air conditioning, antennas, photovoltaic systems, etc.) should be treated. Select the preferable treatment using sealants HYPERSEAL®-EXPERT-150, HYPERSEAL® 25LM-S, or/and HYPERDESMO® System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



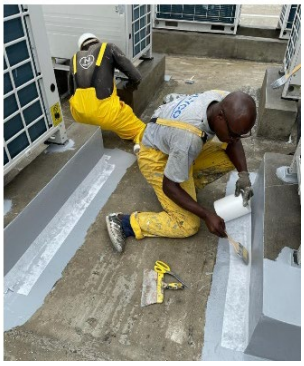
Dilatation joints, inner angles, and small cracks should be treated with HYPERSEAL®-EXPERT- 150 polyurethane-based sealant or any other suitable HYPERSEAL® sealant as described above.

THICKNESS OR TENSILE STRENGTH



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

TREATMENT WITH REINFORCEMENT: HYPERDESMO® ZERO OR AQUASMART-PU-2K with GEOTEXTILE.



Cracks and details can also be treated by application of the selected waterproofing membrane with GEOTEXTILE reinforcement. When the primer is fully cured, treat the details with the selected waterproofing membrane using a brush or small roller. 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. 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 (OPTIONAL)

NOTE: Choose a suitable WATERPROOFING MEMBRANE for your project needs and requirements.

AQUASMART-PU-2K

AQUASMART®-PU-2K is a two-component, water-based, aliphatic coating that offers exceptional performance in various applications. It is easy to apply due to its thixotropic nature and is the first waterborne product globally to achieve a 25-year CE certification for roof waterproofing and protection. The coating is a water-based, fully aliphatic polyurethane membrane with excellent mechanical, chemical, thermal, and UV resistance. It is easy to apply and repair, thixotropic, seamless, elastic, and capable of bridging small cracks. It is highly resistant to stagnating water, with water vapor transmission and excellent weather and UV resistance. The white color reflects solar energy, reducing the internal temperature of structures. The coating can be easily colored with any water-based pigment paste available at hardware stores. It is suitable for exposed waterproofing applications such as concrete roofs, metal roofs, PU foams, and asbestos roofing. As a 2-in-1 solution, it combines the functionalities of both a waterproofing membrane and a top coat, eliminating the need for an additional protective layer.

AQUASMART® – PU -2K	
CONSUMPTION	2.2-2.6 kg/m²
APPLICATIONS METHODS	brush, roller airless spraying
TACK FREE TIME, @ 77 °F (25°C) & 55% RH	6-24 Hours
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time
RECOAT TIME OF PRODUCT	6-48 Hours
ADDITIVES	X
COLORS	WHITE/GREY
COMPONENTS	SINGLE COMPONENT

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

Application notes: You apply AQUASMART®-PU-2K in 2 successive layers with total consumption 2.2-2.5kg/m². Geotextile reinforcement is highly recommended:

1. You can use GEOTEXTILE-50 PRESSED of 17 cm width for reinforcement over details, flashing points and large joints.
2. You can use GEOTEXTILE-50 PRESSED of 105 cm width for catholic reinforcement all over the surface.

Geotextile reinforcement is applied over the fresh first coat. Check the application details below. AQUASMART®-PU-2K does not need any topcoat for colour

protection, being fully aliphatic. Due to its thixotropic nature, it is easily applied on inclined and vertical surfaces.

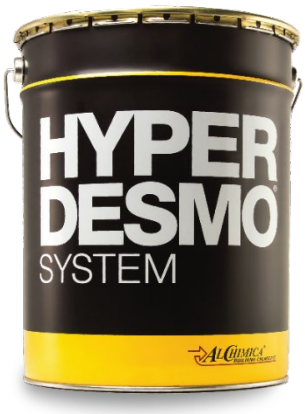
TYPES OF APPLICATIONS	
APPLICATION BY COATS	- Applied with roller or brush: - First coat: 1,5 kg/m^2. - Second coat: 1-1,2 kg/m^2. Apply more coats depending on traffic requirements and system build-up. - Minimum total consumption: 2.2-2.7 kg/m^2.
APPLICATION WITH REINFORCEMENT ✓ GEOTEXTILE ✓ FIBER MESH	You apply the 1st coat of AQUASMART®-PU-2K with a minimum consumption of 1,5 kg/m^2. When AQUASMART®-PU-2K is still wet, you apply the reinforcement (GEOTEXTILE-50 PRESSED (non-woven geotextile of 50gr/m^2)). As soon as the 1st coat cures, application of the 2nd coat of AQUASMART®-PU-2K with a minimum consumption of 1-1,2 kg/m^2 takes place.
APPLICATION WITH BROADCASTING SAND	If an anti-slippery effect is required, silica sand or corundum aggregates can be broadcasted over the AQUASMART®-PU-2K waterproofing membrane. Over the fresh and last coat of AQUASMART®-PU-2K 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 thin coat of AQUASMART®-PU-2K at 0.8-1 kg/m^2 in order to encapsulate the silica sand. For pedestrian traffic requirements, after this coat has cured, you can apply another coat of AQUASMART®-PU-2K.
APPLICATION WITH AIRLESS (200- 250 bar) SPRAY MACHINE.	Applied by airless spraying: 1 kg/m^2 per coat. 6. Open the pail and stir it up to homogenize. 7. If necessary, add 10-15% WATER 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.

HYPERDESMO-ZERO

HYPERDESMO® ZERO is a single-component, solvent-less polyurethane waterproofing membrane that is based on pure elastomeric hydrophobic polyurethane resins and special inorganic fillers. It is odorless, solventless, and highly recommended for indoor waterproofing. The product has excellent mechanical, chemical, thermal, and natural element resistance properties.

HYPERDESMO® SYSTEM	
CONSUMPTION	1.5-1.8 kg/m²
APPLICATIONS METHODS	brush, roller, airless spraying
TACK FREE TIME, @ 77 °F (25°C) & 55% RH	8-12 Hours
APPLICATION OVER PREVIOUS COAT (PRIMER)	Depending on the primer curing time
RECOAT TIME OF PRODUCT	12-24 Hours
NEXT COAT TIME (TOPCOAT)	12-24 Hours
ADDITIVES	• ACCELERATOR-ZERO CHECK THE TDS FOR COMPATIBILITY
COLORS	WHITE, GREY
COMPONENTS	SINGLE COMPONENT

It is a versatile, high-performance waterproofing solution that offers environmental safety, durability, and application versatility. Its features include zero VOC, high mechanical properties, low-temperature flexibility, excellent adhesion, no shrinkage, non-toxic after full cure, and water vapor transmission. It is suitable for exposed waterproofing applications like concrete roofs, metal roofs, and bitumen membrane refurbishment and protection. HYPERDESMO® ZERO sets the industry standards by offering a truly solventless, single-component, PU liquid-applied waterproofing membrane.



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

TYPES OF APPLICATIONS

APPLICATION BY COATS	- First coat: 0.8-1 kg/m². - Second coat: 0.8-0.1 kg/m². Apply more coats depending on traffic requirements and system build-up. - Minimum total consumption: 1.5-1.8 kg/m².
APPLICATION WITH REINFORCEMENT ✓ GEOTEXTILE ✓ FIBER TEXTILE	You apply the 1st coat of HYPERDESMO® ZERO with a minimum consumption of 0.8 kg/m². When HYPERDESMO® ZERO is still wet, you apply the reinforcement (GEOTEXTILE-50 PRESSED (non-woven geotextile of 50gr/m²)). As soon as HYPERDESMO® ZERO 1st coat cures, application of the 2nd coat of HYPERDESMO® ZERO, with a minimum consumption of 0.8 kg/m² takes place.
APPLICATION WITH BROADCASTING SAND	Silica sand can be broadcasted over the ALCHIMICA topcoat that is used in order to protect the HYPERDESMO® ZERO waterproofing membrane. Check more details in the TOPCOAT section below.
SINGLE COAT APPLICATION	HYPERDESMO® ZERO can be applied in only 1 single coat, with a maximum consumption of up to 2kg/m² if you add ACCELERATOR-ZERO to HYPERDESMO®ZERO. 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®ZERO.
APPLICATION WITH AIRLESS (200- 250 bar) SPRAY MACHINE.	1. Open the pail and stir it up to homogenize. 2. 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-ZERO is added to the material.

INDOOR STONE CARPET SYSTEM

One of the advantages ALCHIMICA's stone carpet system offers is the option to choose to apply a drainage system if needed or not. The stones used in the stone carpet system retain drainage properties and offer anti-slip properties to the surface. Water that enters under the stone carpet system, follows the slope of the substrate and finally ends up in the drain. Stone carpet systems that are applied indoors in wet rooms (bathrooms, etc.) require waterproofing and drainage systems.

Note: avoid working indoors directly in wet cells. This creates a permanent wet load that can lead to hygiene problems after a while! Even the use of a pore filler does not protect against this. Stone carpet systems that require horizontal and vertical applications, such for example the application on stairs, must start the application process from the vertical surfaces, covering all the area, and then follow the application on the horizontal surfaces. In the curing process, the thickness may change and the connection between the two surfaces must stay invisible. This can only be achieved in the following order of application.

When pore filler is needed, ALCHIMICA offers the HYPERDESMO-T SL FILLER. These materials can be applied as a gap filler for stone carpets with a consumption of 0,3-1 Kg/m2 depending on the gaps to be filled. Apply a rubber spatula for filling and finish off by roller for the final finish.

B.1. INDOOR STONE CARPET ON HORIZONTAL SURFACES

HYPERDESMO-T SL is a transparent and fully aliphatic polyurethane liquid waterproofing membrane and stone carpet binder for indoor horizontal surfaces. It is a single component, 100% solids polyurethane fluid that cures with the humidity in the atmosphere with excellent mechanical, chemical, thermal, UV, and natural element resistance properties. HYPERDESMO-T SL is ideal as a binder for stone carpets on Indoor horizontal surfaces.

The previously primed, sealed, and waterproofed horizontal area can be edged with profiles. The mixing ratio of Hyperdesmo T SL to the stones used should be around 6-8% by weight. For the mixing process, you need a slow-speed drill (approx. 200 rpm), a digital scale (min. 30 kg), and a clean bucket (capacity depending on the previous one calculated consumption).

Weigh the previously calculated stones in the bucket and enter the required portion of Hyperdesmo T SL. Mix the material well for at least 3 minutes until a homogeneous mass is formed, and the stones are completely enclosed and covered with the binder.

Ready-to-use stone carpet mixture:

(Note: Values may vary)

- 6 mm layer: approx. 14 kg/m² granules + 1.12 kg/m² binder
- 8 mm layer: approx. 18 kg/m² granules + 1.44 kg/m² binder

If possible, remove the finished mixture completely from the bucket and place it on the surface to be worked on. First, wet a stainless-steel smoothing trowel or the tool of your choice with the smoothing agent, or carry SOLVENT 01 with a rag on it. Firstly, spread the stone carpet mixture over the surface. Now start to spread the mixture while smoothing and compacting it to the surface and make sure that you wet your tool with the smoothing agent from time to time to avoid smearing. A previously cut angle profile can be used to check the layer thickness. Make sure that there are no holes or trowel marks. Using a flashlight can help to identify bumps to immediately repair them. Repeat the smoothing process until the surface meets your aesthetic needs and requirements.

B.2. INDOOR STONE CARPET ON VERTICAL SURFACES

HYPERDESMO-T SL VERTICAL is a thixotropic, transparent, and fully aliphatic polyurethane liquid waterproofing membrane and stone carpet binder for vertical surfaces. It is a single component, 100% solids polyurethane fluid that cures with the humidity in the atmosphere with excellent mechanical, chemical, thermal, UV, and natural element resistance properties. HYPERDESMO-T SL VERTICAL is ideal as a binder for stone carpets on Indoor vertical surfaces.

The vertical surface should be previously primed and sealed, or waterproofed if needed. The surface must therefore be pre-coated with HYPERDESMO-T SL VERTICAL to secure adhesion. In the vertical area, work is done wet-on-wet. The vertical area can be edged with profiles. The mixing ratio of Hyperdesmo-T VERTICAL to the stones used should be around 10% by weight. For the mixing process, you need a slow-speed drill (approx. 200 rpm), a digital scale (min. 30 kg), and a clean bucket (capacity depending on the previous one calculated consumption).

Weigh the previously calculated stones in the bucket and enter the required portion of Hyperdesmo T SL VERTICAL. Mix the material well for at least 3 minutes until a homogeneous mass is formed, and the stones are completely enclosed and covered with the binder.

Ready-to-use stone carpet mixture:

(Note: Values may vary)

- 6 mm layer: approx. 14 kg/m² granules + 1.4 kg/m² binder
- 8 mm layer: approx. 18 kg/m² granules + 1.8 kg/m² binder

To further increase the stability and viscosity of the mixture and thus to further simplify the vertical application, a thickening agent can be added and mixed with the stone carpet mixture. Add up to 0.4% Cabosil thickening agent (according to the weight of the finished mixture) to thicken the mixture. This is recommended for surfaces with a height > 10 cm. Simply add the powder suspending agent to the mixture that has already been mixed. Mix again for at least 2 minutes until the thickening agent cannot be seen.

Remove the finished mixture from the bucket and place it lengthwise in front of the working surface. First, wet a stainless-steel smoothing trowel or the tool of your choice with a smoothing agent, or carry SOLVENT 01 with a rag on it. Then press the stone carpet mix against the primed wall. Pull the material from bottom to top with pressure. For smoothing make sure that you wet your tool with the smoothing agent. Keep the tool always wet to avoid smearing, otherwise, the material could pull away from the wall.

Make sure that there are no holes or trowel marks. Using a flashlight can help to identify bumps to immediately repair them. Repeat the smoothing process until the surface meets your aesthetic needs and requirements.

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® SYSTEM

ACCELERATOR-3000A

ACCELERATOR-3000A is a high technology curing accelerator specifically designed for HYPERDESMO® SYSTEM products.

Mixing Ratios: Follow the instructions according to the TDS file.

Pot life 25 min at 25 ºC.

PLEASE REFER TO THE TDS OF ACCELERATOR-3000A TO MAKE SURE WHICH HYPERDESMO PRODUCTS ARE COMPATIBLE WITH THE ADDITIVE.

Prior to application, shake the pail containing ACCELERATOR-3000A. Pour the content of the pail into the pail containing HYPERDESMO®. Mix thoroughly using a low-speed electric mixer and immediately apply.

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.

ADDITIVES FOR THE HYPERDESMO® ZERO

ADDITIVES

ACCELERATOR-ZERO

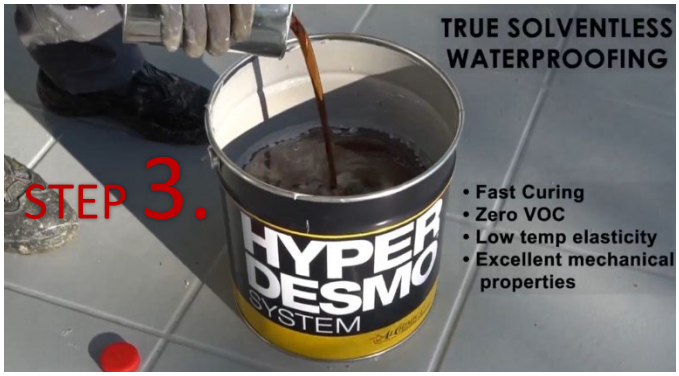
ACCELERATOR-ZERO is a high technology curing accelerator specifically designed for HYPERDESMO® ZERO.

TO MAKE SURE WHICH HYPERDESMO PRODUCTS ARE COMPATIBLE WITH THE ADDITIVE.

Mixing Ratios: Follow the instructions according to the TDS file.

Pot life 25 min at 25 °C.

Prior to application, shake the pail containing ACCELERATOR-ZERO. Pour the contents of the pail into the pail containing HYPERDESMO® ZERO. Mix thoroughly using a low-speed electric mixer and immediately apply.



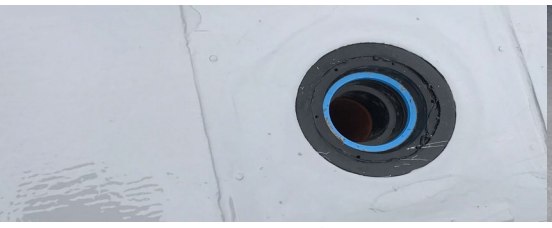
REPAIR AND OVERLAPS PROCESSES

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 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/m^2 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/m^2 in order to secure adhesion. After 3-6h you can apply the next coat of HYPERDESMO®.

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 **A COMPLETE STONE CARPET SYSTEM BASED ON HYPERDESMO®-T**. 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.

- It is forbidden to reproduce it in any form, totally or partially.
- All the above written and provided is subject to the terms and conditions of sale and marketing of ALCHIMICA S.A.

ALCHIMICA S.A.
7, Lampsakou Str.
115 28, Athens Greece
Tel.: +30 214 4167 700
Fax: +30 214 4167 701
www.alchimica.com