



A COMPLETE STONE CARPET SYSTEM

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STONE CARPET

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. Stone carpets are 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 of stone carpets 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.



Polyurethane stone carpet flooring is a versatile and durable flooring option that combines natural stones or aggregates with polyurethane resin to create a visually appealing surface. The primary decorative elements in the flooring are natural stones or aggregates, which can be of various colors and sizes. Polyurethane resin serves as the binding material, forming a strong and flexible bond when cured. The installation process involves mixing the natural stones or aggregates with the polyurethane resin, spreading, and leveling the mixture over a prepared surface, and allowing it to set and cure. The flooring provides a natural and textured appearance and can be customized based on the type, color, and size of the stones



used. Polyurethane provides durability, making it resistant to wear, impact, and other forms of damage, while natural stones contribute to the overall strength and longevity of the flooring. Polyurethane stone carpet flooring is easy to clean and maintain, with regular sweeping or vacuuming and occasional damp mopping being sufficient. It is suitable for various settings, including indoor and outdoor applications, and offers a comfortable underfoot experience due to the combination of natural stones and flexible polyurethane resin. Some polyurethane stone carpet products are designed to be solvent-free and offer indoor applications.



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.

STONE CARPET WITH ALCHIMICA PRODUCTS

ALCHIMICA is a company that specializes in the development and production of polyurethane waterproofing materials. ALCHIMICA produces several products for stone carpet applications such as primers, mixing resins, and aliphatic binders. The stone carpet flooring systems can be built inside and outside for a wide variety of applications such as on pavements, balconies, terraces, or for garden design purposes.

Several applications can be done using our aliphatic polyurethane materials, such as:

	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 one-component high solid, polyurethane resin, which cures with the humidity in the atmosphere. It produces an elastic, highly durable, highly hydrophobic membrane with excellent UV resistance. Being aliphatic, it does not yellow/discolor when exposed to sunlight. It is based on pure elastomeric, hydrophobic, aliphatic polyurethane resin, which results in excellent mechanical, chemical, thermal, UV, and natural element resistance properties.

HYPERDESMO-T eliminates the need for thinning, although SOLVENT-01 may be used when needed. Its outstanding weather and UV resistance ensure long-lasting performance in various environmental conditions. Notably, the product exhibits exceptional thermal resistance, maintaining its structural integrity even at elevated temperatures, with a maximum service temperature of 80°C and a max shock temperature of 200°C. Impressively, it retains elasticity in extreme cold, remaining pliable down to -40°C. The coating also demonstrates excellent mechanical properties, coupled with good chemical resistance, making it a reliable choice for

diverse applications. Furthermore, its ability to allow water vapor transmission adds to its versatility. Remarkably, the coating can be applied in thicker than usual, bubble-free coats, offering ease of use and consistent results.

The material is available in three different versions (BINDER, FILLER, VERTICAL) with different viscosities and rheology to cover all possible stone carpet binder applications. The material can be applied in any thickness or consumption with marble stone without any bubbling or shrinkage issues.

For indoor applications it is recommended to use HYPERDESMO®-T-SL. It is a one-component, 100% solid, fully aliphatic resin, which, once cured, produces a tough glossy membrane with excellent mechanical and UV resistance properties. This innovative coating boasts a solvent-less composition, ensuring an environmentally friendly, safe, and efficient application. Its fully aliphatic nature guarantees resistance to yellowing, even under prolonged UV exposure. Moreover, the formulation ensures strong and uniform adhesion across the entire surface, promoting durability and longevity. With exceptional mechanical properties, including high tensile strength and abrasion resistance, this coating stands out for its ability to withstand various stresses, making it a reliable choice for a range of stone carpet applications. The material is available in three different versions (BINDER, FILLER, VERTICAL) with different viscosities and rheology to cover all possible stone carpet binder applications. The material can be applied in any thickness or consumption with marble stone without any bubbling or shrinkage issues.

In general, in marble stone applications, waterproofing of substrate with Hyperdesmo-System® must be carried out below the marble stone layer.

PREPARATION:

Minimum application equipment required includes protective clothing, a 1KW slow-speed drill, and a brush, roller, or airless spray machine for mixing and application.

Weather: The application temperature range is 5°C to 35°C, with no dew point conditions, 95% relative humidity, and substrate temperature above 5°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 primer application can be done over damp concrete.

REPAIR MORTARS & ADDITIONAL MATERIALS:

- HYGROSMART-FIX&FINISH,
- HYGROSMART-BUILDING-45-THIXO,
- HYGROSMART-MAK-FLOW

In case any spots on the concrete surface need repair, filling, and smoothing, like large cracks, cavities, or level the surface, you could either use:

- 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



- HYGROSMART-BUILDING-45-THIXO. (single-component, shrinkage compensated, thixotropic, fiber-reinforced cementitious repair mortar, certified according to EN1504-03, Type R4 CLASS III), or
- 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).

SEALING SOLUTION:

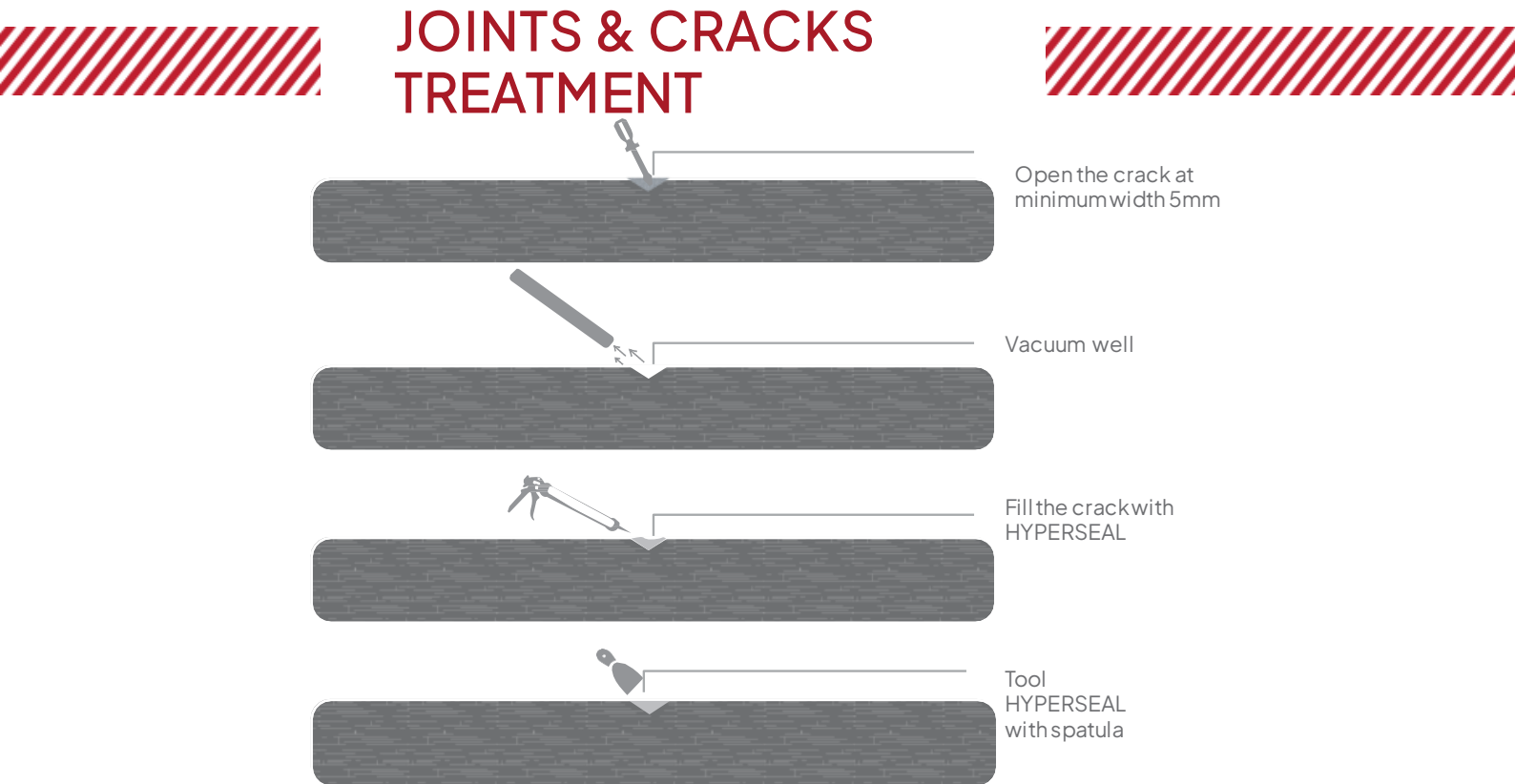


Sealing: HYPERSEAL-EXPERT-150 is a low-modulus expansion joint PU sealant designed to ensure a bubble-free cure even in high temperature and humidity conditions. It exhibits excellent thixotropy, making it suitable for large expansion joints. The ratio width to depth should be 2:1 subject to a minimum 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 $>60^{\circ}\text{C}$ takes place and its resistance to cold allows the sealant to remain elastic even down to -40°C (service temperature range -40 to $+80^{\circ}\text{C}$). Having 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 remaining resistant and unaffected by microorganisms, fungi, and algae growth, making it the most applied PU sealant in a variety of projects.

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.



EXPOSED STONE CARPET

1.1. SYSTEM PRODUCTS

A. WATERPROOFING

- Primer: GEODESMO 50 or AQUASMART-DUR,
- Sealant: HYPERSEAL-EXPERT-150,
- Waterproofing Membrane: HYPERDESMO SYSTEM (CLASSIC, -LV, -C-LV, -HAA)

B. STONE CARPET SYSTEM:

- Horizontal Surfaces: HYPERDESMO-T, (HYPERDESMO-T FILLER optional)
- Vertical Surfaces: HYPERDESMO-T 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

If Waterproofing Is Not Required, Then After Priming The Substrate Proceed With The Stone Carpet System Application.



1.2. GENERAL CONDITIONS

1.2.1. EQUIPMENT

The following application equipment is at minimum required:

- Protective clothing: Protective overalls and gloves.
- Mixing equipment: 1KW slow speed drill, 200 and 400 or 500 rpm, and suitably sized mixing vessel.
- Application equipment: notched trowel, squeegee or roller, rubber spatula.
- Smoothing agent: Detergent-water mixture and Solvent O1
- Extra equipment: A digital scale (min. 30 kg)
- Note: Setting agents (Cabosil) may be added for vertical surfaces.

1.2.2. WORKING WEATHER CONDITIONS

Application temperature range: 5°C to 35°C. Avoid dew point conditions during application. Relative humidity must be no more than 95% and substrate temperature must be at least 3°C above measured dew point temperatures. Do not apply it under rain or snow. If temperature is above 35°C, the following guidelines are recommended:

1. Store materials in a cool environment, avoiding exposure to direct sunlight.
2. Keep application tools cool and dry.
3. Try to avoid application during the hottest hours of the day.

1.2.3. SURFACE PREPARATION

Proper preparation of the 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 grated 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.

1.3. WATERPROOFING

1.3.1. SUBSTRATE PRIMING

Primer: GEODESMO 50 or AQUASMART-DUR primer with consumption of 200 ml or gr/m².



1. GEODESMO-50 is a low-viscosity, fast-curing, polyurethane-based primer. It can be used successfully on both porous and non-porous substrates. It has excellent wetting, impregnation, and paint-overtime. It can be effectively used on both dry and wet concrete, not only as a primer but also as a low-cost sealing solution. It has a very fast curing profile (same-day primer), so 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 24 hours. GEODESMO-50 can be applied with a brush or roller with a consumption of 200 ml/m² on concrete.



2. AQUASMART-DUR is a medium-viscosity epoxy-based primer. You choose to apply this primer over a sound concrete surface. AQUASMART-DUR primer will create a slight film sealing the concrete and increasing the adhesion. After the AQUASMART-DUR application, you should wait at least 12 hours to apply

the main membrane. The main membrane application has to be done within 48 hours after the AQUASMART-DUR application. AQUASMART-DUR is a completely solvent-free and low-VOC primer. If a water vapor barrier is required, increase consumption of AQUASMART-DUR at min 500 gr/m² in three successive layers.



Both primers can be applied with a roller or/and airless spray machine. Notes:

- 1. If it rains after the primer and before the main coat application, you may need to apply again one coat of primer.
- 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.

PROFESSIONAL

HYPER SEAL[®]

POLYURETHANE SEALING TECHNOLOGY

CONSTRUCTION SEALING
FLOORING SEALING
INFRASTRUCTURE SEALING



ALCHIMICA[®]
BUILDING CHEMICALS



1.3.2. DILATATION JOINTS AND INNER ANGLES

Dilatation joints and inner angles should be treated with HYPERSEAL-EXPERT-150 polyurethane-based sealant or equivalent. Additionally, for any existing dilatation joints, inner angles, or/and spots in the concrete surface that need repair, filling, or smoothing like large cracks and cavities, you could either use HYGROSMART-BUILDING-F (one-component, fiber-reinforced cementitious repair mortar, certified according to EN1504-03, Type R3 CLASS III) or EPOXY RESIN-21T (two-component, thixotropic repair epoxy paste) to fill them.

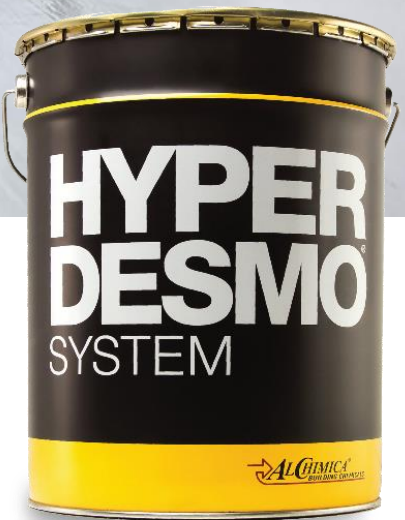


1.3.3. WATERPROOFING MEMBRANE

For the intermediate waterproofing coat, you apply HYPERDESMO SYSTEM (- CLASSIC,, -C-LV) in two successive layers with total consumption of 2kg/m².

NOTE: Other HYPERDESMO versions (LV, HAA, etc.) can also be used according to ALCHIMICA guidelines.

The application can be done with a notched trowel, squeegee, roller, or airless spray machine.



1.4. 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.



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.

1.4.1. 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.



Application of Stone Carpet Mixture (HYPERDESMO-T & stones)

1.4.2. 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.



Application of Stone Carpet Mixture
(HYPERDESMO-T VERTICAL & stones)

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.

INDOOR STONE CARPET

2.1. SYSTEM PRODUCTS

A. WATERPROOFING:

- Primer: UNIVERSAL-PRIMER-2K-4060 or AQUASMART-DUR,
- Sealant: HYPERSEAL-EXPERT-150,
- Waterproofing Membrane: HYPERDESMO-ZERO or AQUASMART-PU- 2K

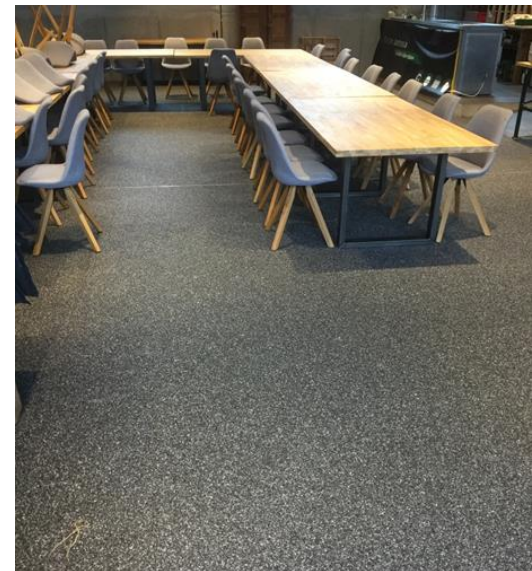
B. STONE CARPET SYSTEM:

- Horizontal Surfaces: HYPERDESMO-T SL, (HYPERDESMO-T SL FILLER optional)
- Vertical Surfaces: 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

If Waterproofing Is Not Required, Then After Priming The Substrate Passed With The Stone Carpet System Application.



2.2. GENERAL CONDITIONS

2.2.1. EQUIPMENT

The following application equipment is at minimum required:

- Protective clothing: Protective overalls and gloves.
- Mixing equipment: 1KW slow speed drill, 200 and 400 or 500 rpm, and suitably sized mixing vessel.
- Application equipment: notched trowel, squeegee or roller, rubber spatula.
- Smoothing agent: Detergent-water mixture and Solvent O1
- Extra equipment: A digital scale (min. 30 kg)
- Note: Setting agents (Cabosil) may be added for vertical surfaces.

2.2.2. WORKING WEATHER CONDITIONS

Application temperature range: 5°C to 35°C. Avoid dew point conditions during application. Relative humidity must be no more than 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:

1. Store materials in a cool environment, avoiding exposure to direct sunlight.
2. Keep application tools cool and dry.
3. Try to avoid application during the hottest hours of the day.

2.2.3. SURFACE PREPARATION

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

- New concrete or other cementitious substrate 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 grated 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.

2.3. SUBSTRATE PRIMING

Primer: UNIVERSAL PRIMER-2K-4060 or AQUASMART-DUR primer with consumption of 200 ml or gr/m².



1. UNIVERSAL PRIMER-2K-4060 is a fast-curing polyurethane-based primer that allows same-day application for both primer as well as the main coat. Being a 2-component material, its curing time is not very much affected by the climate conditions, and it is an ideal solution for application in cold weather or low humidity conditions. The product being 100% polyurethane can be applied on damp concrete, performing excellent adhesion to almost any type of surface as well. 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 indoor and outdoor applications. Apply with a brush or roller in a thin coat with a 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).



2. AQUASmart-DUR is a medium-viscosity epoxy-based primer. You choose to apply this primer over a sound concrete surface. AQUASmart-DUR primer will create a slight film sealing the concrete and increasing the adhesion. After the AQUASmart-DUR application, you should wait at least 12 hours to apply the main membrane. The main membrane application has to be done within 48 hours after the AQUASmart-DUR application. AQUASmart-DUR is a completely solvent-free and low-VOC primer.

If a water vapor barrier is required, increase consumption of AQUASmart-DUR at min 500 gr/m² in three successive layers.



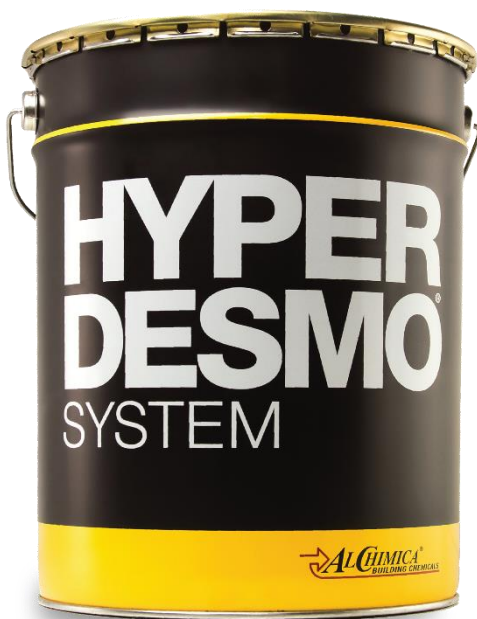
Both primers can be applied with a roller or/and airless spray machine.

Notes:

1. Both Primers have low VOC and can be used indoors as well as outdoors.
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.

2.4. DILATATION JOINTS AND INNER ANGLES

Dilatation joints and inner angles should be treated with HYPERSEAL-EXPERT-150 polyurethane-based sealant or equivalent. Additionally, for any existing dilatation joints, inner angles, or/and spots in the concrete surface that need repair, filling, or smoothing like large cracks and cavities, you could either use HYGROSMART-FIX&FINISH (one-component, fiber-reinforced cementitious repair mortar, certified according to EN1504-03, Type R4 CLASS III) or EPOXY RESIN- 21 T (two-component, thixotropic repair epoxy paste) to fill them.



2.5. WATERPROOFING MEMBRANE (OPTIONAL)

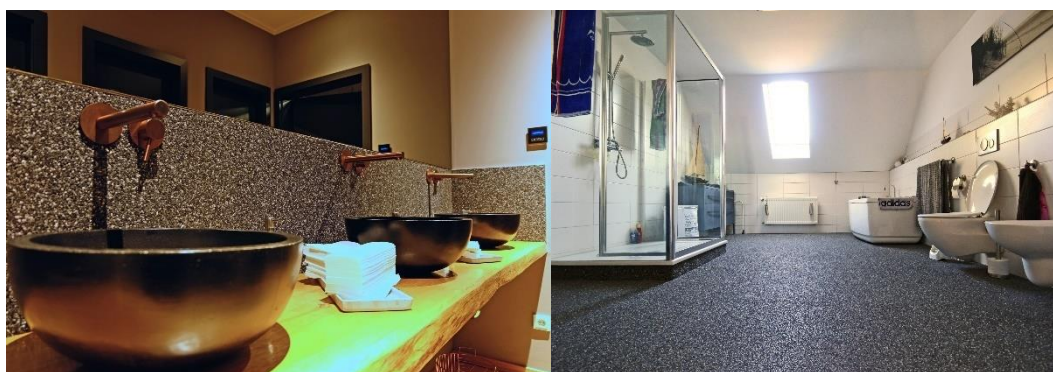
In indoor areas of application such as wet rooms, a waterproofing membrane is required. For the intermediate waterproofing coat, you apply HYPERDESMO-ZERO or AQUASMART-PU-2K in two successive layers with a total consumption of 2kg/m².

Other HYPERDESMO versions (LV, HAA, etc.) can also be used according to ALCHIMICA guidelines. The application can be done with a notched trowel, squeegee, roller, or airless spray machine.



2.6. 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.

2.6.1. 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.



2.6.2. 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.

AESTHETIC WORKS



CLEANING

Tools and equipment should be cleaned immediately using SOLVENT-01 (or water for water-based materials).

NOTE: This method statement is offered by ALCHIMICA as a 'summary proposal' for stone carpets. For projects' particularities and more precise technical support, please contact ALCHIMICA at: alchimica@alchimica.com

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

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

ABOUT THE AUTHOR

TUDAKOVA FOTINI-SVETLANA is an export sales account manager at ALCHIMICA. Her primary goal is to ensure that the appropriate materials are used for specific applications and that customers receive adequate support throughout the purchasing process. She bridges the technical expertise and salesmanship gap by providing technical support and guidance while having a thorough understanding of PU liquid-applied waterproofing membranes. She helps customers choose the best building materials for their specific needs and projects by highlighting their features and benefits. She also assists in troubleshooting and problem-solving, project consultation, and the development of effective sales strategies. She maintains strong relationships with customers and industry stakeholders, and she stays current on industry trends. In addition, she conducts customer and internal sales team training sessions and actively participates in international fairs, workshops, seminars, and exhibitions representing ALCHIMICA Building Chemicals.

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Please consult the above-referred products' technical data sheets (TDS) and safety data sheets (SDS). Under any circumstances, ALCHIMICA does not assume any responsibility for the performance of the waterproofing system given the conceptual flaws of the existing build-up. Imperative for the performance of the system is the correct cleaning, inspection, and maintenance of the waterproofing system.

For projects' particularities and more precise technical support, please contact ALCHIMICA at: alchimica@alchimica.com

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

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