

# DIATHONITE DEUMIX<sup>+</sup>

*Dehumidifying, eco-friendly and anti-saline plaster*

Macroporous lightweight plaster that combines in a single product the properties of a dehumidifying plaster and an anti-saline rough coat. In fact, *Diathonite Deumix<sup>+</sup>* is designed for dehumidification and, at the same time, prevents salts from migrating to the wall surface. The product consists of natural materials such as cork (grain size 0-3 mm / 0-1.18 in), clay, natural hydraulic lime NHL 5 and special additives that improve the adhesion and breathability of the product. The macroporosities characterizing the structure of the product are able to accommodate the salts present in the walls and allow the water to evaporate.

## BENEFITS

- High porosity.
- High breathability.
- Eco-friendly.
- Excellent compression resistance.
- Excellent water repellent properties.
- Reaction to fire: class A1. Does not burn or produce smoke.
- Low thermal conductivity, which limits the phenomena of surface and interstitial condensation, contributing to the thermal insulation of the wall.
- Perfectly compatible with lime and silicate mineral finishes.
- Respects the thermo-hygrometric balance of the support.
- Applicable on damp masonry of any type by hand or with plastering machine.
- Product with double CE (EN 998-1, EN 998-2) and UKCA certification (BS EN 998-1, BS EN 998-2).

## YIELD

4,40 kg/m<sup>2</sup> (±10%) per cm of thickness.  
0.90 lb/ft<sup>2</sup> (±10%) per inch of thickness.

## COLOUR

Light grey.

## PACKAGING

20 kg (44 lb) paper bag.  
Pallet: n° 60 paper bags (1200 kg – 2646 lb).

## APPLICATION FIELDS

Ready-to-use plaster for indoor and outdoor applications. Suitable for the implementation of dehumidification interventions, even for cases of onto-the-ground masonry. The product prevents salts from migrating to the surface and is suitable for the restoration of walls affected by capillary rising humidity. *Diathonite Deumix<sup>+</sup>* solves problems related to the presence of mould (induced by humidity), ensuring a healthy environment and high living comfort. *Diathonite Deumix<sup>+</sup>* is a completely natural and suitable compound where environmentally friendly materials are required.

## STORAGE

Store the product in its original containers tightly closed, away from sun, water and frost, and kept at temperature between +5°C / +41°F and +35°C / +95°F. Storage time: 18 months.

## PREPARATION OF THE SUPPORT

The support must be completely hardened and resistant enough. The surface must be thoroughly cleaned, dry, well-established, with



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Whereas all indications and recommendations supplied herein are stated to the best of our experience and knowledge, they should be considered as indicative only and should be confirmed by exhaustive practical applications. Diasen doesn't know the peculiarity of the processing, or the characteristics of the support. Therefore, the applicator should carry out preliminary tests, to verify the suitability to the foreseen application, and in any case, he will take the responsibility of the intended use. In case of uncertainties or doubts, please contact the company's technical department, provided that this is only a simple assistance for the applicator: he should have the appropriate capabilities and experience to determine the more suitable solution. Always respect the latest update of the technical sheet available on [www.diasen.com](http://www.diasen.com) website.

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no crumbly and inconsistent parts perfectly levelled, and free of dust and/or dirt. Remove any trace of oils, fats, waxes and any saline efflorescence present.

## Concrete

In case of distressed and crumbly concrete, restoration with suitable cement mortar should be planned. For the treatment of reinforcing steel bars apply suitable anti-corrosion products.

**Smooth:** apply the *Aquabond* primer (see technical data sheet).

**Rough:** primer is not needed, apply the plaster directly to the substrate.

## Masonry

If necessary, clean the surface with water jet cleaner or brush the surface. Check the masonry, restore damaged or not fixed bricks and stones. If there are salts, apply *Diathonite Regularization* (see technical data sheet) or another lime-based mortar.

To uniform the substrate, use a lime-based mortar to keep breathability.

## Old plaster

Completely remove the existing plaster up to 1 meter above the band where moisture is visible. With painted plasters, given the wide variety of paints on the market, it is recommended to make an adhesion test to verify the suitability for the application or the need to use the primer *Aquabond* (see technical data sheet). On smooth plasters apply the *Aquabond* (see technical data sheet) primer or, if necessary, perform a staking of the support. On rough plasters proceed with direct application of *Diathonite Deumix<sup>+</sup>*. Before the application, it is always necessary to verify that the existing plaster is compatible with the characteristics and composition of *Diathonite Deumix<sup>+</sup>*; in case of gypsum-based plasters, it is recommended the complete removal before the application of cork based thermal plaster, in

order to avoid compromising the stability of the system due to material incompatibility.

## MIXING

Depending on the degree of water absorption of the support, and also taking into account the environmental conditions, it is recommended to dose the right amount of water needed for achieving the correct adhesion.

Therefore, the amount of water specified is indicative.

- If mixed with a **concrete mixer** or a **mixing drill**, add 12 - 15 L of clean water for each bag of *Diathonite Deumix<sup>+</sup>* (20 kg). **Do not proceed mixing more than 3-4 minutes** when using the concrete mixer. Load the content of the bags inside the hopper and adjust the flow meter of the machine: firstly, set it to **400-600 L/h** to moisten the tube, and then adjust the flow to **300-350 L/h** to proceed with the application.
- The blend must present a foamy consistency.
- Do not add external compounds to the mixture.

## APPLICATION

### Application by hand

1. It is **essential** to wet the support, especially in summer and in case of walls directly exposed to the sun. In case the surfaces were primed beforehand, it is not necessary to wet the support.
2. For low-thickness applications, set up reference points or bands to obtain the required thicknesses. With a masonry trowel apply *Diathonite Deumix<sup>+</sup>* in a single layer, making sure to create a thickness of 2,5 – 3,00 cm (0.98 – 1.18 inches) in one go.
3. For higher thicknesses, apply a first layer of *Diathonite Deumix<sup>+</sup>* and let it dry. Above the applied layer, set up points or reference bands as guidelines to obtain

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the required thicknesses. Points or bands can be made of *Diathonite Deumix<sup>+</sup>* plaster or could be aluminium or wood profiles. In this case the bands must be removed immediately after the application of the last layer.

4. When the underlying coat is consistent to the touch and visually lighter (after about 12/24 hours) proceed with the application of one or more layers of *Diathonite Deumix<sup>+</sup>* until the specified thickness is reached.
5. Wet the surface before each application.
6. Increase the thickness according to the degree of salinity of the masonry. At 60 mm thickness or more, a mesh such as *Polites 140* (see technical data sheet) must be included in the middle of the total thickness. *Polites 140* must be used independently of the thickness for applications on panels, wood, plasterboard or on supports subject to movement.
7. While smoothing the plaster, do not compress *Diathonite Deumix<sup>+</sup>* to preserve the porosity of the product. Use an H-shape or a knife to obtain a smooth surface, with fluid horizontal and vertical movements.

## Application by plastering machine

*Diathonite Deumix<sup>+</sup>* can be applied with plastering machines for lightweight premixed products.

The setting can change depending on the machine chosen. It is possible to use three-phase plastering machines (type PFT G4) equipped with a new stator D6-3, a mixing shaft (semi-closed) mixer, and a "conical" material holder hose with a diameter of 35/25 mm, a nozzle of 14 or 16 mm.

The dilution water is adjusted through the flow meter of the machine starting from a high dosage and decreasing the flow of water until the consistency is suitable for the perfect grip of the material. For the application follow the instructions in the previous paragraph. Spray the product from bottom to top.

## DIASEN DEHUMIDIFYING SYSTEMS

### Dehumidification from the inner side of an onto-the-ground wall

1. After removing the baseboards, proceed taking away the deteriorated surface up to the brick or stone from the floor level.
2. Apply *WATstop* (see technical data sheet) to block raising dampness.
3. Before *WATstop* completely dries out (within 48 hours), apply *Diathonite Deumix<sup>+</sup>* by hand or with plastering machine, with a minimum thickness of 2.5 - 3.0 cm (0.98 – 1.18 inches).

### Dehumidification from the inner side of a basement wall

1. After removing the baseboards, proceed taking away the deteriorated surface up to the brick or stone from the floor level.
2. Apply *WATstop* (see technical data sheet) up to the ground level to the to block raising dampness.
3. Before *WATstop* completely dries out (within 48 hours), apply *Diathonite Deumix<sup>+</sup>* by hand or with plastering machine, with a minimum thickness of 2.5 - 3.0 cm (0.98 – 1.18 inches).

### Dehumidification from the inner or outer side of an above-ground wall

1. After removing the baseboards, proceed taking away the deteriorated surface up to the brick or stone from the floor level.
2. Wet the support thoroughly one hour before application.
3. Apply *Diathonite Deumix<sup>+</sup>* by hand or with plastering machine, with a minimum thickness of 2.5 - 3.0 cm (0.98 – 1.18 inches).

### Application to ceiling

For ceiling applications *Diathonite Deumix<sup>+</sup>* must be put in place with plastering machines for pre mixed. The setting can be changed according to the selected plastering machine.



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Hand application is not recommended. It is recommended to start with a semi-fluid plaster mixture and, if necessary, adjust the flow meter to the most suitable consistency for application.

1. If the surface has not be primed with *Aquabond*, proceed by thoroughly wetting the substrate.
2. Load the contents of the bags inside the hopper and adjust the machine's flow meter.
3. Create the reference bands for obtaining the desired thickness.
4. Apply *Diathonite Deumix<sup>+</sup>* in layers with a maximum thickness of 2 cm (0.78 in).
5. On still fresh product, drown the *Polites 140* mesh (see technical data sheet) at half the thickness, taking care to maintain an overlap of 3 cm on the joints. Avoid the formation of curls or bubbles. The use of the *Polites 140* is necessary on panels, plasterboard slabs, wooden slabs and in all cases where the support is subject to movement or is deteriorated. On mixed or concrete slabs, the use of *Polites 140* is not necessary below a thickness of 3,0 cm (1.18 in).
6. Apply a second layer of *Diathonite Deumix<sup>+</sup>* when the underlying coat is hardened, making sure to perfectly drown the net into the plaster and avoid leaving holes on the surface. On particularly unstable supports it is advisable to fix the net with dowels or nails.
7. *Polites 140* shall be cut off at the reference bands, taking care to maintain an overlap of 3 cm (1.18 in).
8. The reference bands should be removed when the surface of the plaster is compact and not wet to the touch. The voids left by the bands should be filled with *Diathonite Deumix<sup>+</sup>*
9. While smoothing the plaster, do not compress *Diathonite Deumix<sup>+</sup>* to preserve the porosity of the product. Use an H-shape or a knife to obtain a smooth surface, with fluid horizontal and vertical movements.

## DRYING TIME

At a temperature of 23 °C and relative humidity of 50% the product dries in 10-15 days.

- Drying times are affected by relative humidity and temperature of the environment, and can also vary significantly.
- If *Diathonite Deumix<sup>+</sup>* is applied in high thicknesses, the drying time is considerably longer.
- Protect *Diathonite Deumix<sup>+</sup>* from frost, direct insolation and wind while it is still curing.
- In case of high temperatures, hot sun or strong ventilation it is necessary to wet the plaster even 2/3 times a day for the first 2/3 days after application.
- At temperatures above 28 °C (+ 83 °F) wet the plaster every 2 hours to avoid cracks.
- If applied indoors, aerate as much as possible the environment during application and during drying of the product.

For smoothing the plaster, both indoors and outdoors, it is possible to use *Argatherm* (to obtain medium rough surfaces with particle size 0-0,6 mm or 0–0,02 inches) and *Argatherm Ultrafine* for perfectly smooth surfaces.

For finishing these skim coats, use products such as *Decork Façade*, *Acrilid Protect Coating*, and be sure to use only breathable and water-repellent finishes for **exterior** applications. For **indoor** applications, use instead finishes such as *Decork Design*, *C.W.C. Stop Condense*, *Limepaint*, or in any case breathable finishes.

It is always recommended to prefer Diasen finishes.

## SUGGESTIONS

- Do not apply at environmental temperature or at support temperature





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lower than +5°C (34°F) and higher than +30°C (86°F).

- During summer season, apply the product in the cooler hours of the day, away from sunlight.
- Do not apply with imminent threat of rain or frost, in conditions of strong fog or with relative humidity higher than 70%.
- Where it is considered necessary, and only after contacting the Diasen technical office, it is possible to proceed with the application, by hand or by spraying, of a first layer of *Diathonite Deumix<sup>+</sup>* as a rough coat.
- If *Diathonite Deumix<sup>+</sup>* is applied on the inner side of external walls, it is essential that the outer surface does not absorb water. Otherwise, treat the surface with a breathable water repellent product such as *BKK Eco* (see technical data sheet).
- In case of very irregular application surface or affected by diffuse saline efflorescence, level it with *Diathonite Regularization* (see technical data sheet) before proceeding with the application of *Diathonite Deumix<sup>+</sup>*.
- Before applying the product, it is recommended to cover door and windows thresholds, frame and any element that does not need to be coated.
- *Diathonite Deumix<sup>+</sup>* performs its antisaline function until complete saline

saturation of porosities. The saturation rate varies significantly and it is not possible to predict the duration of the plaster itself.

- *Diathonite Deumix<sup>+</sup>* is only one of the components of the restoration project, which must include all the necessary measures to avoid the continuous permeation of water into the masonry.
- Whenever there are doubts about the consistency of the substrate, it is recommended to make an adhesion test area.
- The test area should allow to verify any chemical, mechanical and physical incompatibilities between *Diathonite Deumix<sup>+</sup>* and the support.

## CLEANING

The equipment used can be washed with water before hardening of the product.

## SAFETY

While handling, always use personal protective equipment (PPE) and respect the instructions described in product safety data sheet.

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\* These data, even if carried out according to regulated tests, are indicative and they may change when specific site conditions vary.

## Technical Data\*

Features		Unit
Yield	4.40 (±10%) for each cm of thickness	kg/m <sup>2</sup>
	0.90 (±10%) per inch of thickness	lb/ft <sup>2</sup>
Aspect	powder	-
Colour	light grey	-
Density	450 ± 10	kg/m <sup>3</sup>
	28.09 ± 0.62	lb/ft <sup>3</sup>
Grain size	0 – 3	mm
	0 – 0.11	in
Water to add to the mixture	0.55 – 0.65 L/kg 11 - 13 L for each 20 kg bag	L/kg
	0.066 – 0.078 gal (US) per paper bag (44.09 lb)	gal (US) / lb
Application temperature	+5 / +30	°C
	+41 / +95	°F
Minimum thickness for application	1,5 / 0.6	cm / inches
Maximum thickness for each layer	2.5 / 0.98	cm / inches
Maximum thickness for each layer <i>for ceiling applications</i>	2 / 0.8	cm / inches
Maximum thickness <i>for ceiling applications</i>	2,5 / 0.98	cm / inches
Mixture consistency	Can be sprayed	-
Drying time (T=23°C; U.R. 50%)	15	days
Storage	18	months
Packaging	20 kg (44 lb) paper bag	kg

Final performances		Unit	Regulation	Results
Reaction to fire	class A1	-	UNI EN 13501-1	-
Compressive strength	5,1	N/mm <sup>2</sup>	EN 998-1	category CSII
	739.69	lbf/in <sup>2</sup> (psi)	EN 998-2	M 2.5
Flexural strength	1.4	N/mm <sup>2</sup>	UNI EN 1015-11	-




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	203.05	lbf/in <sup>2</sup> (psi)		
Dried mortar porosity	71.64% (17.83% macroporosity and 54.94% microporosity)	-	-	-
Vapour permeability coefficient (μ)	μ = 4	-	UNI EN 1015-19	highly breathable
	WVT = 14	grains/h·ft <sup>2</sup>	ASTM E96	
Thermal conductivity (λ)	0,080	W/mK	UNI EN 1745	category T1
Thermal resistance (R) <i>for 1 cm/ 0.4 in thickness</i>	0,125	m <sup>2</sup> K/W	UNI 10355	-
Adhesion onto the support (brick)	0,258	MPa = N/mm <sup>2</sup>	UNI EN 1015-12	Break type: C

## Indoor Air Quality (AIQ) Certification

### Evaluation of the results

Regulation or protocol	Version of regulation or protocol	Conclusion
French VOC Regulation	Decree of March 2011 (DEVL1101903D) and Arrêté of April 2011 (DEVL1104875A) modified in February 2012 DEVL1133129A)	
French CMR components	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)	Pass
Italian CAM Edilizia	Decree 11 October 2017 (GU n.259 del 6-11-2017)	Pass
AgBB/ABG	Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes, ABG May 2019, AgBB August 2018	Pass
Belgian Regulation	Royal decree of May 2014 (C-2014/24239)	Pass
Indoor Air Comfort <sup>®</sup>	Indoor Air Comfort 7.0 of May 2020	Pass
Blue Angel (DE-UZ 113)	DE-UZ 113 for “Low-Emission Floor Covering Adhesives and other Installation Materials” (Version January 2019)	Pass
BREEAM International	BREEAM International New Construction v2.0 (2016)	Exemplary Level
BREEAM <sup>®</sup> NOR	BREEAM-NOR New Construction v1.2 (2019)	Pass
LEED <sup>®</sup>	“Low-Emitting Material” according to the requirements of LEED v4.1	Pass
CDPH: Classroom scenario	CDPH/EHLB/Standard Method V1.2. (January 2017)	Pass



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