THERMAL – ACOUSTIC INSULATION

1250314

DIATHONITE EVOLUTION

Eco-friendly thermal, acoustic and dehumidifying plaster

Thermal premixed plaster, fibre-reinforced with cork (gran. 0-3 mm), clay, diathomeic powders and hydraulic lime (NHL 3,5). Natural compound ready to use, for thermal-acoustic insulation and deumidifying projects, suitable both for inside and outside. It is the only product that sums up cold insulation features of cork and warmth insulation features of stones. Recyclable as inert.

BENEFITS

- Insulation against cold and warmth (it guarantees good thermal lag dynamic parameters), up to 12 hours depending on the characteristic of the wall)
- Highly breathable
- Fire resistant
- Eco-friendly
- It replaces the common double-layer wall
- Quick construction system (thermal brick + plaster)
- Very fast application system (by plastering pump)
- It does not crack between pillar and wall

APPLICATION FIELDS

Ready to use plaster, both for inside and outside. Suitable for thermal insulation walls and sound absorbing coatings. It solves thermal bridge and mould problems caused by humidity condensation, ensuring a healthy livespace and a good living comfort. Moreover *Diathonite*® is a completely natural compound, ideal wherever the use of eco-friedly materials is required.

YIELD

kg/m^2 3.7 (±5%) per cm of thickness.

COLOUR

Grey.

PACKAGING

18 Kg paper bag.
Pallet: n° 60 paper bags (1080 kg).

STORAGE

The material, if stored in dry areas on wooden pallets, preserve itself for 12 months.
If stored in the building site, it must be protected from sunrays, ice and water, and kept at temperatures between +5°C and +30°C.

CE

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EN 998-1:2010
Specification for mortar for masonry - Part 1: Mortar for internal and external plaster

Thermal conductivity: λ=0,045 W/mK (category T1)
Compression resistance: 1,5 N/mm^2 (category CS II)
Fire reaction: Euroclass A2
Vapour permeability value: μ=4
Capillary water absorption: 0,35 kg/m^2 h^{0,5} (category W2)
Density: 360±20 kg/m^3

For application video, product page, safety data sheet and other information.

Thermal – acoustic insulation - Plasters

DIASEN IMPROVE YOUR BUILDING

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Technical Data

Featured		Unit
Yield	3,7 (±5%) per cm of thickness	kg/m^2
Aspect	Powder	-
Colour	Grey	-
Weight anhydrous mass (powder)	360 ± 20	kg/m^3
Granulometry	0 – 3	mm
w/c ratio	0,60 – 0,80 10-16 liter per paper bag (18 kg)	l/kg
Mixture consistency	It can be sprayed	-
Application temperature	+5 /+30	°C
Working time (UNI EN 1015-9 – method B)	40	min
Drying time (T=20°C; R.H. 40%)	15	days
Working temperature	-15 /+40	°C
Storage	12 months in original container and in dry places	months
Packaging	18 kg paper bag	kg

Final performances		Unit	Regulation	Result
Thermal conductivity(λ)	0,045	W/mK	UNI EN 12667	-
Sound absorption between 600 and 1500 [Hz]	α > 70%	-	ISO 354	-
Resistance to water steam diffusion (μ)	4	-	UNI EN ISO 12572	highly breathable
Water absorption by capillarity	0,35	kg/m^2 h^{0,5} in 30 min	UNI EN 1015 - 18	category W2
Height of water penetration	40 mm after 90 minutes	mm	UNI EN 1015 - 18	-
Dried mortar porosity	71.64% (17.83% macroporosity and 54.94% microporosity)	-	-	-
Resistance to compression	1,5	N/mm²	UNI EN 1015-11	category CS II

Final performances		Unit	Regulation	Result
Adhesion onto the support (brick)	0.1-type B break (mortar break)	N/mm²	UNI EN 1015-12	-
Secant modulus	742	N/mm²	UNI 6556	highly elastic
Fire resistance (Euroclass)	A2 – s1, d0	-	EN ISO 1716 EN 13823 EN 13501-1	-

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

PREPARATION OF SUPPORT

- Substrate must be completely hardened, dry and resistant.
- The surface must be thoroughly clean, well consolidated, without debris or detaching parts.
- In presence of an existing plaster non painted, take care that this is solid and completely attached to the substrate.
- Do not apply Diathonite Evolution over painted surfaces. Completely remove the existing finishing.
- If the plaster is detaching, even if only partially, completely remove it with a chisel. Clean the surface with a high pressure water jet cleaner (externally) or brush it.
- Check the substrate. Repair and fix damaged or non well anchored bricks, stones or blocks.
- If applied on smooth surfaces (concrete pillars, existing plaster, wood, metal) it is necessary to apply first the adhesion primer *Aquabond* (see technical data sheet).
- The support temperature must be between +5°C and +30°C.

MIXING

- If the product is mixed with a concrete mixer, add lt 10-15 of water per bag of *Diathonite Evolution* (18 kg). Mix the product for 1-2 minutes. **Do not mix the material more than 3-4 minutes.**
- If mixed with drill mixer, add 15-16 lt of water each bag of *Diathonite Evolution* (18 kg). Mix until water is absorbed (2-3 minutes).
- The mixture must be foamy.
- The amount of water indicated on the packaging is merely indicative. It is possible to obtain more or less fluid mixture depending on the application.
- Never add antifrost products, cement or aggregates.

APPLICATION

Application by hand

1. Abundantly wet the surface. This step in **fundamental** during summer season and if walls are exposed to sun. With high temperature it is **fundamental** to wet the plaster even after 2/3 from the application.
2. Apply a first coat of *Diathonite Evolution* by trowel of about 1,5-2,0 cm of thickness and let dry (about 24 hours).
3. Over the applied coat, prepare the area creating the reference bands to obtain the required thicknesses. Points and reference bands must be created with the same product or it is possible to use steel or wood edging. In this case, these must be removed as soon after the application of the last coat. Empty spaces must be filled with *Diathonite Evolution*.
4. Corner sections can be placed together with reference bands, anyway before the application of the last layer.
5. Apply successive layers up to the required thickness. Each layer must be at max 2,5 cm. Successive layers must be applied when the one below is dry (after about 24 hours). Wet the plaster before the application of each layer. For thickness higher than 3 cm it is advisable to apply more than 2 coats of products.
6. Beyond 6,0 cm of thickness it is advisable to use a plaster mesh (such as *Polites 140*). The net must be drawned into the plaster at about half of the total thickness.
5. Prop and smooth as for a normal civil plaster.

Application by pump
Diathonite Evolution can be applied using plastering machine for pre-mixed products.
Use plaster machine such as Pft G4 equipped with the following accessories: high turbulence mixer, stator/rotor D6-3 or D7-2,5, mixing flange rotoquirl, material hose 25x37 mm length ml. 10/20, spray lance.
1. Abundantly wet the surface. This step in **fundamental** during summer season and if walls are exposed to sun.
2. Load the contents of the bags inside the hopper and adjust the flowmeter (500/600 l/h).
3. Apply *Diathonite Evolution* with a thickness not higher than 1,5-2,0 cm and let dry. Successive layers must be applied when the previous one is already hardened (after about 24 hours).
4. Wet the plaster before the application of each layer. For thickness higher than 3 cm it is advisable to apply the product in more than 2 coats.
5. Beyond 6,0 cm of thickness it is advisable to use a plaster mesh (such as *Polites 140*). The net must be drawned into the plaster at about half of the total thickness.
6. Place corner sections before the application of the last layer.
7. Prop and smooth as for a normal civil plaster.

DRYING TIME

At 20°C and with relative humidity level of 40%, the product dries completely in 15 days.
- Drying time is influenced by humidity level and temperature and may significantly change.
- Protect *Diathonite Evolution* plaster from ice, direct sun light and wind.
- With high temperature, direct sunlight or strong wind it is necessary to wet the plaster 2/3 times per day for the next 2/3 after the application.
- At temperature higher than 28°C, wet the plaster every 2 hours to avoid cracks.
- If applied internally, ventilate as much as possible the room during application and drying.

To finish the plaster it is possible to apply externally the *Argacem HP* render and the coloured finishing *Plasterpaint Coloured* or *Argacem Coloured;* internally it is possible to use the *Argacem Neutral* and a breathable hydro paint.

SUGGESTIONS

- Do not apply at temperature lower than +5°C and higher than +30°C.
- During summer season, apply the product during the cooler hours of the day, away from sun.
- Do not apply with imminent threat of rainwater or ice, in condition of strong fog or with relative humidity level higher than 70%.
- If applied internally, particularly with low thick wall, it is necessary that the surface does not absorb water.

In case apply Diasen finishes (*Plasterpaint Coloured, Argacem Coloured or Acrilid Protect Coating*) or, if in in presence of exposed walls, apply a siloxane, transparent, breathing and water-repellent product such as Diasen *BKK*.

CLEANING

Wash tools with water before product hardening.

SAFETY

For the handling, see product safety data sheet.

While handling always use protective gloves and antidust mask.

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