THERMAL – ACOUSTIC INSULATION - screed

1750411

DIATHONITE SCREED

Thermal, breathable and lightened screed

Fiber reinforced screed with cork (granulometry 0-3 mm - 0-0.12 in), clay, diatomaceous powders and hydraulic binder. Natural ready-to-use compound to realize lightweight thermal screeds for the insulation of floors and ventilated roofs.
With this product it is possible to thermally insulate without weighting existing floors and structures. *Diathonite Screed* can be used indoor and outdoor, on new constructions and on renovations.

ADVANTAGES

- Insulation against cold and heat.
- Highly breathable
- Fire resistant – class A1.
- Lightweight product, suitable for renovations.
- Ready to use.
- Fiber reinforced.
- It can be used indoor and outdoor.
- Suitable to drown piping.

APPLICATION FIELDS

Ready to use screed for indoor and outdoor. Suitable to realize thermal screed for residential buildings, public buildings, hotels, conference rooms and all those places that need to be insulated from the rooms below.
Can be used both on existing floors and on new constructions.
Diafon + Diathonite Screed system allows insulating the floor from footsteps and vibrations.

YIELD

6.00 kg/m^2 (± 5%) per cm of thickness.
3.12 lb/ft^2 (± 5%) per inch of thickness.

COLOR

Grey.

PACKAGING

25 kg (55.10 lb) paper bags.
Pallet: n° 50 paper bags (1250 kg - 2775.80 lb).

STORAGE

Store the product in its original and perfectly closed containers, in well ventilated areas, away from sunlight, rain and frost, at temperature between +5°C (41°F) and +35°C (95°F).
Storage time 12 months.

CE

Diasen srl
Zona Industriale Berbentina, 5 Sassoferrato ANCONA
17
EN 13813
Screed material and floor screeds - Screed material - Properties and requirements

Resistance to compression	> 5.00 N/mm^2 (classe C5)
Fire reaction	classe A1
Thermal conductivity	λ= 0,060 W/mK

CONTRIBUTES TO LEED® CREDITS

LOW ECOLOGICAL IMPACT

NON TOXIC

ECOSOSTENIBILE eco

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

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DIASEN® GREEN BUILDING FUTURE

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Technical data

Features		Units
Yield	6,00 ± 5% per cm of thickness	kg/m^2
	3.12 ± 5% per inch of thickness	lb/ft^2
Minimum thickness	4.0	cm
	1.96	in
Aspect	powder	-
Colour	grey	-
Granulometry	0 – 3	mm
	0 – 0.12	in
Density	600 (±10%)	kg/m^3
	37.46 (±10%)	lb/ft^3
w/c ratio	11 – 12.5 l per bag of 25 kg	l/kg
	2.91 – 3.30 U.S. gal per bag of 55.1 lb	gal of U.S./lb
Application temperature	+5 /+30	°C
	+41/+86	°F
Drying time (T=23°C - 73.4°F; R.H. 50%) Thickness 5 cm – 1.97 in	28	days
Storage	12	months
Packaging	paper bag 25 kg	kg
	paper bag 55.10 lb	lb

LEED® Credits

Standard LEED for New Construction & Major Renovation, LEED for Schools, LEED for Core & Shell, v. 2009

Thematic	Credit	Points
Energy & Atmosphere	EAp2 - Minimum energy performance	compulsory
	EAc1 – Optimize Energy Performance	from 1 to 19
Materials & Resources	MRc2- Construction Waste Management	from 1 to 2
	MRc4 – Recycled Content	from 1 to 2
	MRc5 – Regional Materials	from 1 to 2
	MRc6 - Rapidly Renewable Materials	1
Indoor Environmental Quality	IEQp3 - Minimal Acoustical Performance*	compulsory
	IEQc3.2 - Construction Indoor Air Quality Management Plan — Before Occupancy	1
	IEQc4.1 - Low Emitting Materials - Adhesives and Sealant	1
	IEQc9 - Enhanced Acoustical Performance*	1
	IEQc11 - Mold Prevention*	1

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Final performances		Units	Regulations	Result
Thermal conductivity (λ)	0.060	W/mK	EN 12667	-
Specific heat (c)	1000	J/kgK	EN 1745 EN 10456	-
	0.239	kcal/kg °C	-	-
Attenuation of normalized impact sound pressure level ΔL_w of the system composed by *Diafon* + *Diathonite Screed* (5.0 cm - 1.96 in).	$\Delta L_w = 22$	dB	EN ISO 717-2	-
Footstep insulation index of the system composed by *Diathonite Screed* (5.0 cm - 1.96 in) + *Diafon* + hollow – core concrete floor.	$L'_{nw} = 58$	dB	EN ISO 140-7 DPCM 05.12.1997	-
Resistance to compression	> 5.0	N/mm²	EN 13813	C5
	725.20	lbf/in^2	-	-
Tensile resistance	> 2.0	N/mm²	EN 13813	F2
	>290	lbf/in^2	-	-
Resistance to water steam diffusion (μ)	4	-	EN ISO 12572	highly breathable
Fire reaction (class)	A1	-	EN 13501-1	-
Bulk density of dry mortar	800 (±10%)	kg/m^3	-	-
	50 (±10%)	lb/ft^3		

* 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 and resistant enough. The surface must be thoroughly clean, well consolidated, without debris or detaching parts.
In the presence of installations, provide a concrete protection.

Hollow – core concrete

Primer is not needed; *Diathonite Screed* can be applied directly to the substrate.
In the presence of depressions or holes recover them with suitable mortar.

Wood and steel

These types of support are subject to considerable expansion and movement, so it is necessary to use a galvanized metal reinforcement mesh and *Aquabond* primer (see technical data sheet).

Panels

For a well done work, make sure that the panels are well-aligned and perfectly anchored to the support. Then proceed directly casting *Diathonite Screed*. Even in this case, it is necessary to use a galvanized metal reinforcement mesh.

For supports not mentioned in this technical data sheet, please contact Diasen technical department.

MIXING

According on the water absorption of the substrate and the environmental conditions, it is recommended to determine the amount of water needed to obtain the correct adhesion. The amount of water indicated on the packaging is merely indicative.
Mix the product in a concrete mixer adding 11 (class S1) – 12.5 (class S2) lt (2.91 – 3.30 U.S. gal) of water per bag of *Diathonite Screed* used (25 kg – 55.1 lb). Mix for about 4-5 minutes. It is fundamental not to exceed mixing time. Do not mix the product by hand.
Never add antifrost products, cement or aggregates.

APPLICATION

1. It is **FUNDAMENTAL** to wet the substrate, particularly during summer time and over existent screeds exposed to the sun.
2. Prepare the area creating reference bands to obtain the required thicknesses. Reference bands must be created with woods or other suitable materials.
3. It is advisable to position the reference bands to a maximum distance of 2.5 meters (8.20 ft) from each other.
4. Check the leveling of the reference bands.
5. Cast *Diathonite Screed* filling the area between the bands.
6. Level the screed with an aluminum line laying on the bands, making a regular and continuous movement. As you proceed it is advisable to use a plastic or other material trowel to smooth and compact the surface.
7. *Diathonite Screed* must have a maximum thickness of 5 - 6 cm (1.97 – 2.36 in) in a single layer. For larger thickness apply *Diathonite Screed* in more than one layer.
8. When the screed drowns piping, it will be necessary to use a galvanized metal reinforcement mesh. The minimum thickness of the screed above the piping must be at least 3 cm (1.18 in), and the mesh must be positioned immediately above the piping.
   The thickness and the type of galvanized metal reinforcement mesh should be established according to the expected loads.
9. Provide a suitable drown of the piping.
10. For the application on wood, steel supports or panels, it is necessary to use a galvanized metal reinforcement mesh for any thickness of *Diathonite Screed*.

Do not apply *Diathonite Screed* with traditional pumps for screed.

APPLICATION in combination with insulating mat *Diafon*

1. Lay *Diafon* mat on the support with the synthetic film facing upwards.
2. Remove the adhesive and seal the mats overlapping them of 10 cm (3.94 in) to realize a continuous soundproofing layer.
3. In the overlapping of the sheets take account of the way of casting of the screed, to prevent the sheets from opening. The surface must be completely covered.
4. *Diafon* can be laid directly above the structural slab or above the screed that covers the piping, before the application of *Diathonite Screed*.
5. *Diafon* must be turned up over the wall to avoid the formation of acoustic bridges between the floor and the structure of the building. The height of the fold must be higher than the finished floor, fold angle must be of 90°. No rounds should be made to avoid the formation of gaps between *Diafon* and slab.
6. For a good acoustic insulation, cast *Diathonite Screed* in a minimum thickness of 5 cm (1.97 in), as described in Application section.
7. Lay the floor with ceramic or marble elements or parquet flooring.
8. Cut *Diafon* over the paved surface.
9. Lay the skirting board, taking care not to fix it, by grouting, to the floor and keep it raised by the floor of about 2 mm (0.08 in). If necessary, the gap between the floor and the skirting board can be closed with an elastic material in order to avoid acoustic bridges.

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DRYING TIME

At 23°C (73.4°F) and with relative humidity level of 50%, the product dries in about 28 days if applied with a thickness of 5 cm (1.96 in).

- Consider about 7 - 10 days more for each inch of thickness depending on the environmental conditions.
- Drying time is influenced by humidity level and temperature and may significantly change.
- Protect *Diathonite Screed* while curing from ice, direct sunlight and wind to avoid successive cracks.
- With high temperature, direct sunlight or strong wind it is necessary to wet the plaster even 2/3 times a day for the next 2/3 days after the application.
- Once the application has been completed, to avoid damages before the application of the floor, *Diathonite Screed* must not be subjected to pedestrian traffic or to heavy loads.
- Take care *Diathonite Screed* has completed its drying shrinkage before the laying of the floor, to avoid cracking.
- *Diathonite Screed* can be directly paved with ceramic, terracotta or stoneware.
- The screed can be coated even with glued parquet after at least 28 days of curing.
  If *Diathonite Screed* is too rough to lay parquet flooring, smooth the surface with a sanding disks machine and apply *WATstop* (see technical data sheet).
- *WATstop* is recommended when it is necessary to consolidate the surface of *Diathonite Screed* before floor laying.
- *Diathonite Screed* is not suitable to place under floor heating system. In this case, *Diathonite Screed* can be placed below the piping to avoid any thermal dispersion.
- *Diathonite Screed* can be coated with liquid waterproofing or coatings Diasen without the use of primers. For information, please visit www.diasen.com.

SUGGESTIONS

- Environmental and support temperature must be between +5°C and +30°C (+41°F and +95°F).
- During summer season, apply the product during the cooler hours of the day, away from sun.
- If applied outdoor, do not apply with imminent threat of rainwater or ice, in condition of strong fog or with relative humidity level higher than 70%.
- Application time is about 30 - 40 minutes, but it may change depending on temperature and ventilation.
- Outside it is very important to create suitable dilation joints at regular intervals. Joints must be properly realized to avoid cracks and lesions on the final coat.
- Always keep any existing structural and / or expansion and / or insulation joints on the support.
- Apply suitable joints where there are material changes in the support, fixed elements such as pillars, partitions, doors or thresholds, or changes of casting direction.
- To seal the joints use *Diaseal Strong* sealant (see technical data sheet).
- In special cases (wide distance between pillars, high loads, etc.), use always galvanized metal reinforcement mesh to reinforce *Diathonite Screed*.

CLEANING

Wash tools with water before product hardening.

SAFETY

While handling, respect the instructions described in product safety data sheet and always use protective gloves and anti-dust mask.

DIASEN Srl - Z.I. Berbentina, 5 - 60041 Sassoferrato (AN)
Tel. +39 0732 9718 - Fax +39 0732 971899
diasen@diasen.com - www.diasen.com