

OWL FORCE 10 (A+B+C)

Epoxy-cement waterproofing (water barrier).

Three component epoxy resin to waterproof in negative and positive pressure, to use as osmotic on underground wall, to encapsulate rising damp and to realize a vapour barrier over moist substrate. The product is formulated with a special epoxy resin (part A), a catalyst (part B) and special cement (part C).

BENEFITS

- Resists to 9.5 atm (132.3 psi) of positive and negative pressure (counterthrust).
- No excavation or demolition, if applied inside.
- It is used as water barrier onto ground walls in *Diasen Dehumidifying System* (in combination with *Diathonite Rinzafo* and *Diathonite Deumix* – see technical data sheets).
- Excellent waterproofing, filling and consolidating properties.
- Multipurpose solution.
- Used as vapour barrier on concrete substrates.
- Thanks to its osmotic properties, it avoids removal and disposal of old plasters.
- Easy to plaster, or paint over and to tile.
- Applicable also at low temperatures (+5 °C / +41 °F).
- Solvent free product.

COLOR

Black, white.

APPLICATION FIELDS

Product suitable as:

- waterproofing for positive and negative pressure (counterthrust), for damp problems, when it is not possible to act directly on the origin of infiltration (ground walls, underground rooms, elevator shaft, garages, basements, cellars and tunnels);
- encapsulates rising damp and saltpetre in *Diasen Dehumidifying System*;
- steam barrier of ground level floors;
- filler for joints tiles and cracks on substrate to restore.

Suitable inside and outside.

YIELD

- 1.00 kg/m² (62.34 ft²/gal U.S.) as vapour barrier with a support's humidity content < 4%, in *Sport Flooring* or in *Diasen Dehumidifying System*.
- 2.00 kg/m² (31.17 ft²/gal U.S.) as waterproofing in counterthrust.

PACKAGING

Each bucket contains 3 components (A+B+C) ready to be mixed.

5 kg (0.86 gal U.S.) or 10 kg (1.73 gal U.S.) plastic buckets.

Pallet: - n° 84 buckets of 5 kg (tot 72.24 gal U.S.);
- n° 48 buckets of 10 kg (83.04 gal U.S.).

STORAGE

Store the product in its original containers tightly closed, in well ventilated areas, away from sun and ice, and kept at temperature between +5°C (+41°F) and +35°C (+95°F).

Storage time: 12 months.



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14
EN 1504-2
Products and systems for the protection and
restoration of concrete structures –
Part 2: Systems to protect concrete surfaces

Water vapour permeability: $\mu = 13361$



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

Waterproofing - Liquid

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, in order 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 in order to determine the more suitable solution. Always respect the latest update of the technical sheet available on www.diasen.com.

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Technical Data

Features		Units
Yield	1.00 kg/m ² (62.34 ft ² /gal) as vapour barrier with a support's humidity content <4%, in <i>Sport Flooring</i> or in <i>Diasen Dehumidifying System</i> .	kg/m ²
	2.00 kg/m ² (31.17 ft ² /gal) as waterproofing in counterthrust.	(ft ² /gal)
Colour	black, white	-
Mixing water	30 - 40% of water if applied by roll or brush	-
	10 - 20% of water if applied by trowel	-
Pot life at +20°C / +68°F, R.H. 40%	2	hours
Waiting time between 1st and 2nd coat (T=+20°C / +68°F); R.H. 40%)	From 5 to 24	hours
Application temperature	+5 /+35	°C
	+41 /+ 95	°F
Drying time (T=+20°C / +68°F); R.H. 40%)	24	hours
Storage	12 months in original containers and in dry place	months
Packaging	5 kg (0.86 gal U.S.) or 10 (1.73 gal U.S.) plastic buckets	kg / gal U.S.

Final performances		Units	Regulations	Results
Waterproofing with positive pressure	9.50	atm	EN 12390-8	-
	139.61	psi	-	
Waterproofing with negative pressure (counterthrust)	9.50	atm	-	-
	139.61	psi	-	-
Water vapour permeability	μ = 13361	-	EN ISO 7783	-
Adhesion on concrete surface Adhesion test – pull off	2.50	N/mm ²	EN ISO 4624	good
	362.59	lbf/in ²	ASTM D4541	
Adhesion on tuff Adhesion test – pull off	3.00	N/mm ²	EN ISO 4624	good
	435.11	lbf/in ²	ASTM D4541	
Adhesion on chipping floor Adhesion test – pull off	1.50	N/mm ²	EN ISO 4624	good
	217.56	lbf/in ²	ASTM D4541	
Adhesion on expanded polyurethane panel (PU) Adhesion test – pull off	1.25	N/mm ²	EN ISO 4624	good
	181.30	(bf/in ²	ASTM D4541	

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Final performances		Units	Regulations	Results
Adhesion on expanded polystyrene (EPS)	1.50	N/mm ²	EN ISO 4624	good
Adhesion test – pull off	217.56	lbf/in ²	ASTM D4541	
Adhesion on glazed ceramic tile	2.50	N/mm ²	EN ISO 4624	good
Adhesion test – pull off	362.59	lbf/in ²	ASTM D4541	
Adhesion of the system FORCE 10 + Acriflex Winter on PVC	> 7.00	N/mm ²	EN ISO 4624	excellent
Adhesion test – pull off	> 1015.26	lbf/in ²	ASTM D4541	
Adhesion of the system FORCE 10 + Acriflex Winter on expanded polyurethane panel (PU)	1.83	N/mm ²	EN ISO 4624	good
Adhesion test – pull off	265.42	lbf/in ²	ASTM D4541	
Solvent resistance	-	-	-	non resistant
Organic acids resistance	-	-	-	non resistant
Inorganic acids resistance (5% concentration)	-	-	-	not good
Resistance after 50 freeze-thaw cycles (-15°C/+15°C) (+5°F/+59°F)	-	-	UNI EN 202 ASTM C666	unchanged
Weathering Test resistance	2000 hours (> 10 years*)	hours / years	EN ISO 11507 ASTM D4587	-

* 1680 hours of Weathering Test are compared to 10 years. This equivalency is merely indicative and may vary according to weather conditions of the place of use of the product. The above data even if carried out according to regulated test methods are indicative and may change varying the specific site conditions.

PREPARATION OF SUPPORT

The substrate must be completely hardened and resistant. Otherwise restore it with a suitable cementitious mortar. The surface must be thoroughly clean, well consolidated, without debris or loose parts.

The support must be as regular and workable as possible.

Before the application, it is recommended to cover, window and door sills and any other element that must not be covered with the product.

Irregular vertical substrates

Level the surface with cement or lime based mortar or plaster (such as *Diathonite Regularization* – see technical data sheet).

Plasters

Make sure that the plaster is well bonded to the substrate. Otherwise remove or make good.

With painted or skimmed plasters, make sure that the superficial layer is well bonded to the substrate.

Concrete

In presence of new laid cement substrate, this must be sufficiently dry and fully cured.

The concrete substrate must have a moisture content equal to or less than 4%.

Tiles

Old ceramic pavements must be attached to the substrate (otherwise remove them and fill with cementitious mortar) and must be clear of any debris or loose parts, also free from greases, waxes, oils, etc.

Given the wide range of tiles found on the market, it is recommended to test an area in order to verify the perfect adhesion of the product.

Joints can be filled with OWL FORCE 10 applied by stainless steel or rubber trowel.

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OWL FORCE 10 (A+B+C)

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MIXING

1. Open the epoxy paste (part A) and pour it completely into the bigger bucket.
2. Open the cement (part C), pour it slowly into the bucket and mix.
3. Open the catalyst (part B), pour it completely into the bucket and perfectly mix the three components (A+B+C) until obtaining a homogeneous paste, without lumps. Use a professional drill mixer.
4. Add 10 - 20% of clean water.
5. Do not close the bucket after mixing. FORCE 10 creates an exothermal reaction.

Depending on the absorption degree of the substrate and on environmental conditions, it is recommended to measure the right amount of water to have the right consistency (max 20%).

Adding a higher percentage of water could compromise the effectiveness of the product. Never add anything else to the compound.

APPLICATION

1. Apply FORCE 10 by trowel in at least two coats, taking care that the product penetrates well in the substrate and the surface is completely covered. In case of rain falls on not perfectly dry product carefully verify the suitability of the next layer.
2. Wait at max 24 hours between one coat and the next one.
3. Eventual successive coats (smoothers, regularization, plasters, paints, etc.) must be applied within 48 hours.

Dehumidification from inside of a completely underground wall

1. Remove the damaged surface back to brick or stone.
2. If the wall is very irregular, level it with a lime or cement based plaster like *Diathonite Regularization* (see technical data sheet).
3. Apply FORCE 10 with a yield of 1.0 kg/m² - 62.34 ft²/gal U.S. on a completely dry wall as a consolidating product.
4. Before FORCE 10 is completely dry (24 hours at +20°C - +68°F and R.H. of 40%), apply the dehumidifying plaster *Diathonite Deumix* (see technical data sheet), with a minimum thickness of 2.0 cm (0.79 in).

Dehumidification from inside of a partly underground wall

1. Remove the damaged surface back to brick or stone.
2. If the wall is very irregular, level it with a lime or cement based plaster, like *Diathonite Regularization* (see technical data sheet).
3. Apply FORCE 10 with a yield of 1.0 kg/m² (62.34 ft²/gal U.S.) on a completely dry wall, up to 60 – 70 cm (23.62 – 27.56 in) above the level of the ground or until the maximum level of humidity (choose the higher level).
4. Before FORCE 10 is completely dry (24 hours at +20°C - +68°F and R.H. of 40%), apply *Diathonite Regularization* (see technical data sheet) up to 60 – 70 cm (23.62 – 27.56 in) above the level of the ground or until the maximum level of humidity, with a minimum thickness of 0.5 cm (0.20 in) to create an anti-salt barrier.
5. Wait until *Diathonite Regularization* is dry (see technical data sheet), wet the surface and apply the dehumidifying plaster *Diathonite Deumix* (see technical data sheet) with a minimum thickness of 2.0 cm (0.79 in).

When it is not possible to apply *Diasen Dehumidifying System* (for technical or economical reason), remove the old plaster, restore the wall using 2 - 3 mm (0.08 – 0.12 in) of FORCE 10, and finish the wall with smoothers, paint or other type of coating within 48 hours from the application. Apply the product up to 60 – 70 cm (23.62 – 27.56 in) above the level of the ground or until the maximum level of humidity (choose the higher level).

DRYING TIME

At 20°C (+68°F) and 40% of relative humidity, the product dries in 24 hours.

- Drying time is influenced by relative humidity level and by temperature and may change significantly.

When FORCE 10 is completely dry, it can be coated with plasters (like *Diathonite* plasters), smoothers (like *Argacem* smoothers), acrylic, polyurethane or epoxy *Diasen* resins, glues; walkable, trafficable and reflective *Diasen* coatings, tiles or paints, because it is also bonding agent.

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WATstop (A+B+C)

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SUGGESTIONS

- If there are structural problems in the substrate, restore with certified structural mortars (like *Buildfix* or *Calce Storica* mortars).
- *FORCE 10* can be used as primer on smooth surfaces with a yield equal to 0.3 kg/m².
- Do not apply at environmental and support temperatures lower than +5°C (+41°F) or higher than +35°C (+95°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 ice, in case of strong fog or relative humidity level higher than 70%.

CLEANING

Wash tools with water before product hardening.

SAFETY

For the handling always use personal protection tools and see product safety data sheet.



Waterproofing - Liquid

