LOGIC WATER + LOGIC EX

difference between other similar products on the market

There are four conditions that must be met before a good hydrophobic material:
Low surface tension in the active agent,
Long-term durability against alkaline building blocks
Distribution of sensitive active substance in solution
Wetting of water smoothly in the wall

Logic Ex + Logic Water
Impregnation with formation of a monomolecular water repellent strip on pore wall

Advantages:
It is long-lived and was used first in 1967 and is estimated to be approximately 80-100 years of duration due to long-term use without loss of measurable effect.
The longest usage experience in terms of this kind of products.
Even in 100% water-concentrated knitted walls, it has a simple and safe handling due to its excellent dispersion feature. Since products cannot be mixed with water and have a very low surface tension as water, pore water automatically compresses to other pore areas by nature law capillarity forces and is thus ejected from building material that is to be blocked. Thanks to small holes and large hole distances of 25 cm horizontally, drilling is minimal (in the field-on-doors sets).
Horizontal, vertical, oblique or flat, any set shape is possible.
There is no risk with occurrence of cracks in bush or subsequent collapse of wall.
Less material consumption. This is because pore volumes of building material do not need to be filled (as in products with pore-filling effect).

Logic Ex + Logic Water products do not contain salts and do not encapsulate salts within building material.
Even salts present in wall are inactivated by drying.
The pores of building material are not clogged by formation of a molecular system or mono molecular sliver in the pore wall.
The natural heat insulation of building material is completely recovered, because after drying pores contain air which is the worst thermal convection among all the pore filling materials that can be considered.
It is suitable for all wall constructions and concrete, even clay materials (clay-mortar, clay-brick).

Disadvantages
Longest product experience
Longest durability time
Maximum effect
No structural harmful side effects
There are no similar products in the market

And so forth, completely organic hydrophobic sets (barrier)
Effect type:

Hydrophobicity of the building material

Advantages:

There is no salt formation in wall structure. According to composition, air pockets are filled with more or less high amount of air after drying, and thus existed air insulation is recovered.

Disadvantages:

It usually has a poor disintegration feature on wall. This means that less hole distance is required between holes (10-12 cm hole distance).
The use is therefore limited in part by saturation of building material with <90% water.
As active ingredients slowly crumble, some products can be used in alkaline walls and in concrete or calcareous sand stones.
As a solution, the use of white spirit, in part, is avoided, with proper odor.

Hydrophobic micro emulsion sets (barrier)

Effect type:

Hydrophobicity of building material

Advantages:

None.

Disadvantages:

The average effect is limited by size of pores due to size of the droplet. Distribution in building material is poor, high work requirement (20 holes per meter set (barrier)).
Blockage of fine pore portion of building material by emulsion droplets larger than the fine pores (by more than 50%) of the building material.
Limited duration of several years. The effect does not last 3-4 years. Depending on manufacturer, products contain surfactants (emulsifiers) which, in turn, penetrate wall and reduce hydrophobic effect.
In products contained in potassium glassware, structural harmful, hygroscopic salts are encapsulated in the wall and cause an intense wear effect.

Silica-set (barrier)

Effect type:

Blockage of building material pores with glass cup-jelly (water ratio 90%)

Advantages:

Cheap.

Disadvantages:

It has a bad influence. It does not come to dry on the wall around the set. At the top of the set only a short period of time is concerned. It has a short effect period of 2-3 years.

The gel will shrink in pores such that increased moisture is still capillary, and (pure) organic hydrophobic material can be injected into sample.

Significant amounts of hygroscopic, structurally harmful potassium carbonate are formed which accumulate near top of wall or test and draw air into atmosphere. Hygroscopically salted wall mortar needs to be replaced after 2-3 years. It is even more burdensome to purify non-plastered walls. It has a very corrosive effect.

The thermal insulation loss of wall with water jelly around set zone of wall is preprogrammed and leads to distilled water problems in the extrinsic.

Aqueous artificial-gel-sets (barriers)

Effect type:

Blockage of pores of building material with aqueous gel (water ratio 90%).

Advantages:

None. In residential and commercial buildings, use of artificial material gels in mountain and tunnel constructions is partly very beneficial, although price is higher, due to higher durability of gypsum glaze.

Disadvantages:

It has a bad influence. On walls around water block on wall. At the top of the set, a short-term partial drying is seen. It has a short effect period of 3-4 years. After 2 to 2.5 years, the gel is shrunken in pores, again with increasing humidity as a capillary, and (pure) organic hydrophobic material can be injected into example. It exhibits a bad distribution in the building material, high work expenditure (20 drills per meter set).

The thermal insulation loss of wall with water jelly around the set zone of the wall is preprogrammed and leads to distilled water problems in extrinsic.

The use of plate method has more than being unreliable and is practically entirely desirable because material pressed in front of the wall, evenly distributed outside the earth, can never be practically practiced.

Siliconate-sets (barriers)

Effect type:

Hydrophobicity of building material

Advantages:

Pure clogging with aqueous gel does not occur in pure siliconate solutions.

Disadvantages:

It has a bad influence. It shows a bad distribution in the building material, putting too much work burden (20 holes for each meter horizontal set), and limited effect over a few years, losing effect within 3-4 years.

Hygroscopic salts are encapsulated in the wall in such a way as to cause structural damage in the combination products of glass cups (potassium glass cups). It has an intense abrasive effect.

Wall Saws:
Impact Shape
Mechanical separation of wall and placement of a set path

Advantages:
The sawing method no longer affords any advantage because of long-term availability of hydrophobic products that have been functioning well for a long time and used to create a horizontal set.

Disadvantages:
There are a lot of works involved and they are expensive. Cracked deflections in walls cannot be reliably removed.
In order to construct yacht sets around basement, it is necessary to excavate a large construction pit from outside, which causes measures to be taken to become more expensive.
Technically, this is a thing of the past.

Impact of high-alloy sheet Impact Type:
Separation of wall mechanically with high alloy sheets

Advantages:
None.

Disadvantages:
It has a very bad influence. Because of its wear (hole formation due to salts), it has a very short life span. It is a method with too many harmful side effects.
Depending on the horizontal set machine, the basement cannot be placed at the ground level, it can be placed 8-12 cm above the ground level. The lower part remains wet and a set of liquid is stored behind the base. It is virtually never used from interior, because corner sections and interior wall connections cannot be closed.

Hot-Paraffin Sets
Impact Type:
Blockage of building material pores with melted hard paraffin

Advantages:
It has a nice function if it is applied without error. The set has a very long duration of action.

Disadvantages:

It is very burdensome and costly. Most of the combinations required with hygienic plaster make this price even more expensive (Horizontal set price per meter is 500-600 euros). In addition, energy cost from customer is very important.

Edible process limits that require heating. The entire cross-section of wall must be heated to 100 ° C (typical 150 ° C). If this cannot be achieved (due to the cold soil outside), faulty insulation will be case. Once the wall has reached the required high temperature from outside, polystyrene foam insulation and usually bituminous exterior insulation is damaged. The required heat for pressurized water damage cannot be reached, producing boiling water (100 ° C) for days!

If, for example, cracks occur in the wall, it is not possible, for example, to crack an error-free crack because the injected resin does not bond to paraffin and does not provide insulation!

Thus, it is not possible to apply insulation to the pressurized water either by combination or afterwards by applying reaction resin!

Foam-Resin Sets

Impact type:

Filling the possible gaps of the wall

Advantages:

It has no advantage as a horizontal set. But it is cheaper in price and has direct water stopping effect.

Disadvantages:

It is not used for horizontal sets as material. It's a very bad disintegration feature on the wall. Because viscosity is too high, material only penetrates into larger voids. The fine porous structure (stone + mortar) is not penetrated and their insulation is not provided.

It does not have a long-lasting effect on pressurized waterproofing. Because the foam is shrinking after a short time. In addition to injecting liquid foam resin, there is also danger of cracking wall due to foam swelling. Because volume of existing voids on wall is not known and therefore it is not possible to use an overdose.

Reaction resin sets

Effect type:

Filling the possible gaps of the wall

Advantages:

It has no advantage as a horizontal set. Special types of epoxy resin offer excellent properties for subsequent insulation against compressed air.

Disadvantages:

It is not used for horizontal sets as material. It's a very bad disintegration feature on the wall. Due to its high viscosity, it is not possible to penetrate into the pores of the fine porous material.

Insulation mud and set (barrier) plaster

Impact Type:
Isolation of wall tops in interior (called negative insulation)

Advantages:
None.

Disadvantages:
Basically fault of building physics
It does not prevent water entry into wall. Real water damage (water leakage from the wall) is just hidden (not seen for a short time).

Insulation paint application inside wall
Impact Type:
Insulation of top of wall inside in room.

Advantages:
None.

Disadvantages:
Technical intent. It does not prevent water entry in wall. Real water damage (water leakage from the wall) is just hidden (not seen for a short time).

Electro-Osmosis Effect Type:
Conversion of water molecule into electric field

Advantages:
None.

Disadvantages:
It has a bad function, costly due to burden of installation, requires intensive care, constant electricity consumption, free flowing direct current and electrolysis products cause metal wear.
Metal parts such as doors and door frames that are in contact with wall are worn.

In practice, there is always a jump in protection from wear and tear, which is necessary due to kinematic reasons, as well as the protection of metal parts on the wall against wear.
The effect only happens on wet walls, because dry walls do not conduct electricity.

Radio-Electro-Osmosis
Impact Type:
None.

LOGIC WATER

difference between other similar products on the market

Required product features

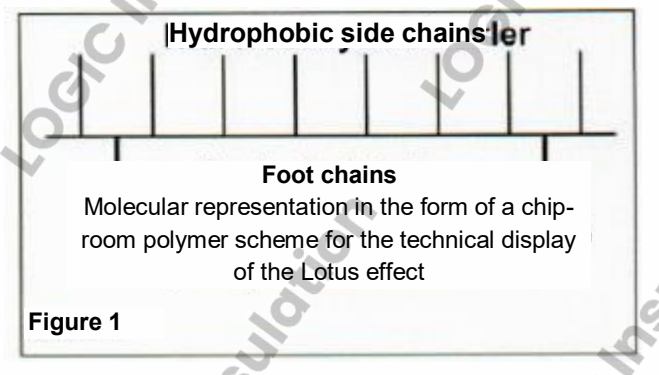
About 30 years ago, façade dye manufacturers had to learn that the pores of these paints must be clear.
Unfortunately, however, the complex function of the exterior facades of buildings is still unknown in general. This, in turn, pushes many facade hydrophobic manufacturers to formulate product formulas that are partly unusual, surprising, inadequate, and even structurally harmful.
This results in demands for hydrophobic materials that work very well.

1) The hydrophobic material must have a very strong hydrophobic effect in order to be able to show a constant resistance to a wide range of air and wind factors.
2) The hydrophobic material must penetrate to a sufficient depth for porous building materials to resist very high negative wind factors of hydrophobic effect.
3) It is important, in particular, that the strength of the hydrophobic substance and the water vapor absorption should not increase in practice in order to ensure that the housing moisture-prevention is achieved at an adequate level.
4) Hydrophobic substance, salts and harmful substances for structure should not be released.
5) Locations such as limestone sandstone or concrete areas should have chemical resistance at a sufficient level to enable population to be dredged without causing loss of activity.
6) Building frontal water should have a durability effect over 20 years (infiltration of insulating material to the building facade).
7) As a result of the use of hydrophilic material, visual changes such as a white screen or a shiny upper surface should not occur. Also, concentration of color (more pronounced color) should be avoided.

The facade impregnation is a physical game played with pressure. The stronger hydrophobic effect (the greater the angle of the drop edge), means the lower sticking power of water, and better adhesion strength that holds droplets in a firm round shape.
This means that stronger shape of drop, means that the more wind pressure is needed to make drop change its shape so that it is repressed in pore of building material.
Unfortunately, on market, there are many products that can only reach 90-95 ° drop-edge, and in this sense, these products have only a very weak hydrophobic effect.

Logic Water + Logic Ex
These products consist of reactive polymers dissolved in high purity fine-fluid paraffin oil. In real solutions, molecule of active agent (called molecular system) floats in solution completely free. This guarantees that they fit into smallest pores and that they hydrophobicate their walls.

The product and polymer molecule are tailored to specific requirements of building facade or top surface hydrophobicity. The polymer molecule forms the molecule called the two-chambered molecule (**figure 1**) and thus creates Lotus effect.
To see cause of Lotus effect in a lotus leaf, we need to use an electron microscope. Unfortunately, it is not possible to illustrate effect of "filtered" water drop.
Figure 2 shows "filtered" water drop as a computer graphic on the hydrophobic wax knob of a lotus leaf. In other words, lotus effect is produced not only by the planar area of a hydrophobic material but also by the air layer located between the knobs by hydrophobic knob structure.



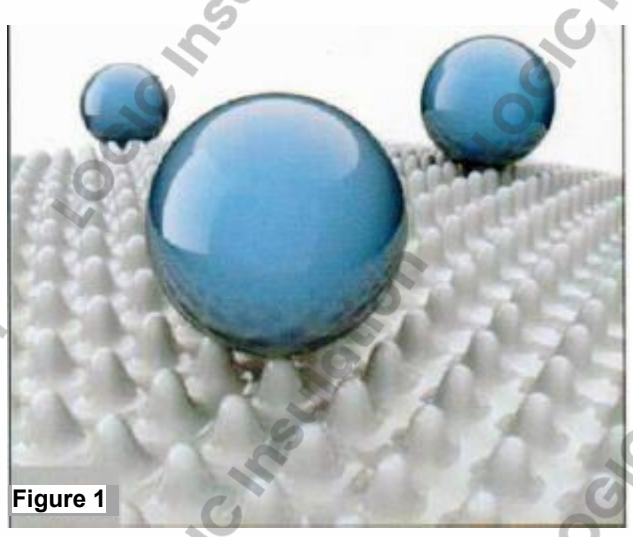


Figure 1

Hydrophobic side chains

Foot chains

Scheme molecular illustration of a chambered polymer for technical representation of the Lotus effect

Because air has a lower surface tension than that of all known soils, the combination of wax blends with the air layer results in a water-repellent effect that cannot be achieved, such as, for example, silicone paint.

Like the beeswax of lotus leaf in micrometer field, long side chains of molecule comb (Figure 1) are responsible for good bonding of foot chains to sub layer (porous wall), while strongly hydrophobic effect in the pico- or nanometer field.
Because side chains are loaded differently, molecules are automatically directed in right direction so that bottom chains (the porous wall) are at the top of pile chains, i.e. porous chamber is porous, for example from a porous wall.
As hydrophobic side chains do not contain water, water droplets in side chains and in air are filtered between side chains.
The thickness of the polymer liner in the porous wall is thus only suitable for the height of the molecule (in the field of the picometer). **In other words, pore diameter is as incredible as it practically does.**
The ratio of hydrophilic polymer to hydrophobic polymer film having a diameter of **10** micrometers is shown in **figure 3**.

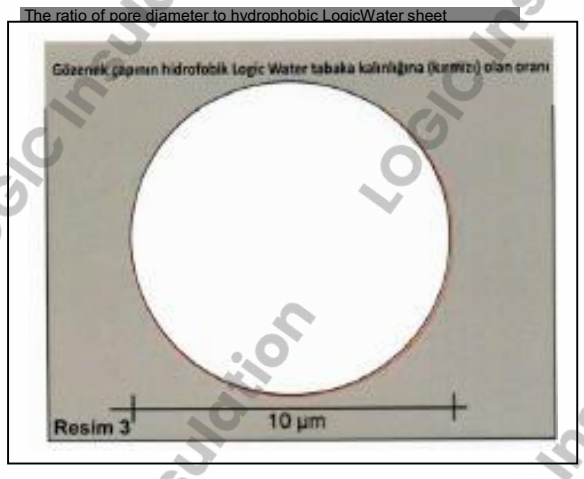


Figure 3

The ratio of pore diameter to hydrophobic Logic Water layer thickness (red)

Advantages

1. The reconstruction of true lotus effect with molecular hydrophobic knobs with adsorbed air layer produces maximum hydrophobic values.

2. The chemical reaction with subsurface / top surface ensures the highest durability period of hydrophobic effect (without loss of measurable effect since 1967).

3. Sub-nanoparticle - "one layer" - The system creates the thinnest possible monomolecular layer, and therefore does not bleed into fine pores, while maximum pore opening prevents damage from occurring.

4. The longest product experience is from 1967.

Disadvantages

For 50 years, there is no known disadvantage.

Extra Features

Longest product experience, long durability, maximum impact. No structurally harmful effects. There is no similar product in the market.

Other resin solutions

Hydrophobic solvents can be produced in a wide variety of forms. The needed is substance with a lower surface tension and a dissolving substance which is soluble in the material.

Products with lower top tension are available, for example, from A to Acrylic (artificial resin) Z to Zinc Stearate (metal soap).

Even diesel oil has a hydrophobic effect for a certain period of time.

A to Z also include Rubber (vulcanized rubber) such as G, Magnesium Stearate such as M, Silicone such as S, wax such as W and a lot of other materials.

Metal soap such as Magnesium and Zinc Stearate has been used for years to protect monument sculptures. But since they have a very low effect, they are not stable enough in terms of chemistry, so they are over 50 years old (they left their place to other things). The waxes are also very quickly deteriorated (crumbling) and blocking the pores of building substance at required concentration.

Silicone resins still have the best hydrophobic character, but they form strips and are partly sensitive to alkalis and therefore may be subject to saponification (alkalinity) or bleeding (strip formation) of fine pores (increased water vapor-diffusion resistance).

All these materials form a smooth surface similar to surface of lotus and do not form a top surface with lotus structure and therefore do not create a real lotus effect.

It should not be forgotten that substances in which two or more (active) substances are combined and their general characteristics are not even possible to be estimated.

The penetration depth of these substances is very different, just like substances themselves.
It is very difficult and even hardly possible for user to find out which product is suitable for his / her needs and requirements because of multiplicity of products offered, and generally because their effects and side effects are written in a cost-effective manner.

Advantages
None.

Disadvantages
There is no real lotus effect, it has a lower effect and the duration of effect is short. Partly important pore bubbles cause damage (cracking) with the formation of water vapor-pressure in the lower layers.

Aqueous micro emulsions
Micro emulsions were born in 1980s due to technical abuse of all organic solvents and abrasive environmental considerations of their replacement with water.
As if we cannot go out on a bike with a bike, a large number of demands cannot be solved without organic solutions, or can only be solved with great efficiency loss.
Micro emulsions consist of highly dense fluid (more fluid) silicone resins than their bases or their solution in organic solution and are dispersed (emulsified) in the form of small water droplets with an emulsifier (surface).
The emulsion droplets are of such a size that they can be filtered out through the use of micro filter (membrane filter) filters, pore size of brick, calcareous sandstone and similar building materials.

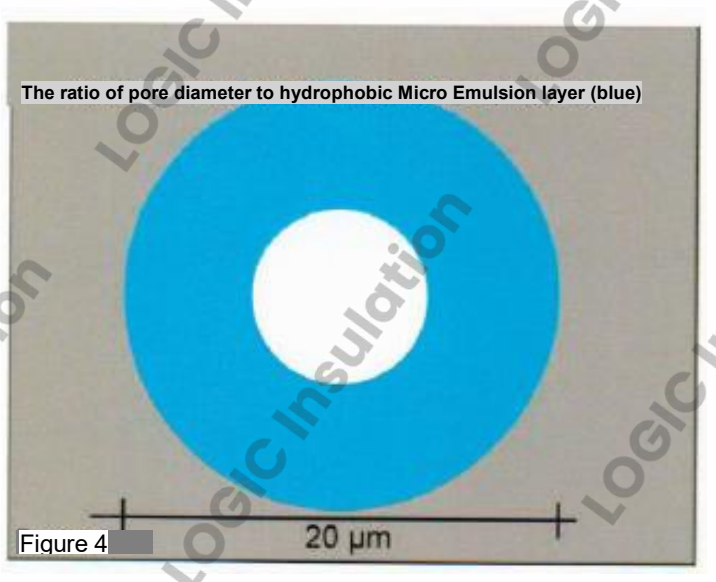


Figure 4

Figure 4
The ratio of pore diameter to hydrophobic Micro Emulsion-layer (blue)

That is, droplets of emulsion do not penetrate into the micro filter, they accumulate on upper surface.
The micro emulsions have a poor depth of population in their pores, because pore size of building material is the same as the diameter of micro filter.
The reason for this is that the individual molecules of the emulsion droplets are almost a thousand times larger and therefore do not fit into small pores.
Only incidentally very small emulsion droplets can penetrate into the pores of the building material.
This is in addition to the fact that the hydrophobic effect of the silicone resin has been significantly reduced with the emulsifier, since the hydrophobic (hydrophobic) effect of the surface fibers is added.
Because of the micrometer-scale of the emulsion droplets, they also form strips in micrometer scale in the wall pores **(Figure 4).**

When comparing **figures 3 + 4**, scales that are shown differently should also be considered.

For figure 3, a pore diameter of 10 pm was chosen because the low power of hydrophobes cannot be demonstrated in a pore size of 20 pm. Picture 4 shows a pupil size of 20 pm, because a pore size of 10 pm is evidenced by micro emulsion.

As figure 4 shows, even in case of real building matter pores, water vapor-an important increase is seen in spreading strength. Smaller pores (about 50% of the pores) are completely blocked. This, in turn, avoids dwelling of the house nemesis and drains them tightly in closed windows, eventually causing building's exterior walls to be moistened and the interior walls to form mold fungus.

Advantages

None.

Disadvantages

It has no real lotus effect, it has a lower effect and duration of its effect is short. Partly important pore bubbles cause damage (cracking) with the formation of water vapor-pressure in lower layers.

Aqueous silicate solutions

The low molecular weight silicones can be saponified by reaction stretching with alkaline and thus become water-soluble. Sodium or potassium me l silicates (5-1%) are also presented for exterior facade hydrophobicity. Siliconate is encapsulated with the effect of air carbonic acid. Silicone low molecular silicones are formed; they are partially bonded and exhibit a hydrophobic effect. But simultaneously, an alkaline carbon (salts of carbonic acid) is formed.

Sodium silicate, forms sodium carbonate soda, it is formed when large crystals (crystal sodas) take water and breaks mortar of joints with crystal pressure. Potassium silicate thus forms potassium, a strong hygroscopic salt, which draws water from air of room and moistens wall.

As it can be seen, penetration depth of the aqueous silicone solution penetration is very poor and is limited to only 2-3 mm in majority of upper surfaces. Puncturing of resulting silicone resin has a hydrophobic effect and is not very stable in terms of chemistry.

It is almost impossible to process large areas in a spotless manner. At transition points where processed areas are not being processed more than 5 minutes later, a white flat trace occurs (Figure 5), which requires a lot of trouble.

White smooth traces on top of overlapping silicon treatment on exterior after silicone treatment.

Figure 5

Figure 5 White smooth traces on outside of silicon process on exterior after silicone treatment.

The reason for this is encapsulation of salt. Because carbonic acid reaction starts directly after application of silicone solution. Then, if first treated area is once again covered with silicate solution, it is not possible for this to pass through the transition points, salts formed in first layer are confined by second layer of siliconate and a salt layer is formed in second layer. These two layers of salt form a white trail that can be clearly seen after drying, and it is not possible to destroy it with the first falling rain with hydrophobic cause.

Advantages
None

Disadvantages
There is no real lotus effect, it has a lower effect and the duration of effect is short. Stain formation (Picture 5).