

**HYDROEFFECT -
WATERPROOFING AGENT for CONSTRUCTION MATERIALS
“Hydroeffect-2.1”**

HYDROEFFECT ensures **protection, renewal, restoration** and **preservation** of treated materials by making them waterproof and protecting from a capillary rise of moisture.

HYDROEFFECT has a unique performance even if compared with the most famous waterproofing materials available on the global market.

In contrast to the existing analogues of both domestic and foreign made, which are being held on the surface of materials only by very weak forces of adhesion **HYDROEFFECT** penetrates into a depth of 10 - 20 mm and creates a multimolecular layer with a powerful chemical "cross-linking" of the coating and protected surface, forming up a single monolith with the material. Therefore, the destruction of the coating can only occur after strong mechanical influences that destroy and the protected material as well.

Specifications:

- wetting angle - 119 - 128 degrees;
- life-time: up to mechanical destruction of background layer;
- the material is environmentally friendly, chemically neutral, contains no toxic compounds and/or heavy metals;
- hydrophobic film is non-flammable, resistant to diluted acids and alkalis, UV radiation and withstands temperatures from -60 °C ... +200 °C.

Scope of utilization:

- concrete, foam concrete, paving slabs;
- marble;
- airport runways and road surfaces;
- brick (lime-sand, limestone, ceramic, shell rock, sandstone, natural and artificial stone);
- plaster, roofing slate, facade plaster and other coatings;
- porous mineral surfaces;
- wood;
- metal;
- different paint and varnish coatings;
- waterproofing of basalt and other fibers;
- other hydrophilic materials of different nature.

HYDROEFFECT properties:

- resistant to UV radiation;
- heat-resistant;
- corrosion proof;
- reduces:
 - soiling;
 - heat conductivity;
 - dust forming (after treatment of concrete floors);

- protects against aggressive environments, fungus, efflorescence;
- preserves the "breathing" of materials - (gas and water vapor permeability).

It is very important that a hydrophilic material protected with **HYDROEFFECT** (as concrete, brick, stone, etc.) can be successfully painted with any oil and/or water-based paints, as the adhesion of protected material stays very high. Moreover, the new paintwork becomes even more durable. It will not peel from walls or ceilings as the reason for such peel-off is a destruction of paint with water molecules coming from the inside of the material. But, the newly formed hydrophobic film firmly covers the destructive pathways for water. When covering **HYDROEFFECT** treated surfaces with ceramic tiles there will be no problems with the adhesion of tiles to the protected layer.

HYDROEFFECT gives to the treated surfaces the following external effects:

- it does not change its upper appearance;
- makes them glossy;
- provides for a "wet stone" effect: aligns and strengthens the color of the treated surface, covers minor imperfections of the finishing;
- when introducing pigments, gives a certain color to the surfaces.

METHOD OF APPLICATION:

- **HYDROEFFECT** is to be applied over the surface of the treated material;
- surface of treated material should be dry and clean, free from dirt and efflorescence, etc.;
- to be applied at temperatures not lower than +5°C and humidity not exceeding 80%;
- shake the container with **HYDROEFFECT** well before use;

HYDROEFFECT can be applied with brush, roller or sprayer unless the absorbing stops with no stains on surface;

- when treating fine-pored materials it is recommended to repeat the applying of **HYDROEFFECT**.

RE-APPLYING:

- for water-based waterproofing agents - to be made in 1-3 hours, not allowing for a complete drying of the previous layer;
- for organic-based waterproofing agents - can be done after a complete drying out of the previous layer.

MATERIAL SPREAD:

depends on the porosity of the treated surface and makes up to 50 - 200 ml/m².

CHECKING THE COATING QUALITY:

- to be performed after a complete dry-out of the treated surface - not earlier than in 3 days;
- it is necessary to wet the treated surface profoundly with water. Water is supposed to slither down in the form of drops, and the surface should not be wet.

SAFETY MEASURES:

- when working it is necessary to use rubber gloves, respirator, protective clothing etc.

After drying out the treated surface is non-flammable and non-toxic.



**HYDROEFFECT -
MODIFIER WATERPROOFING
“Hydroeffect”- F-400 (1-1)**

The additive is to be introduced into the construction and other cement containing materials for their protection, improvement of manufacturing technology and technical specifications of materials.

Why it is so important to use HYDROEFFECT?

As the properties of **HYDROEFFECT**, the reliability and durability of its effect turn this additive into a unique material on the world market.

A practical use of **HYDROEFFECT** brings the quality of treated materials at much higher level.

Following the test data after applying HYDROEFFECT the product acquires the following properties:

- plasticizing effect - 12 cm;
- compressive strength:
in 28 days - no less than 125 - 130%;
in 60 days after a frost resistance tests - 160%;
- water absorption - less than 1%;
- frost resistance - at least 300 cycles.

HYDROEFFECT also enhances the thermal insulation of the material and its resistance to icing, UV radiation, corrosive environments, pollution.

CONSUMPTION of HYDROEFFECT:

- - 0.15 ... 0.3% of the cement weight (0.5-1.0 l/m³ of concrete).

APPLICATION AREAS:

- Airfield runways and highways, paving slabs;
- Concrete (monolithic, special, reinforced concrete, etc.);
- Other cement containing materials.

HOW TO USE:

HYDROEFFECT is added into the composition of the materials when dosing or mixing components.

WHY IT IS ECONOMICALLY PROFITABLE TO USE HYDROEFFECT?

- reduces expenditures for cement;
- reduces expenditures for various additives (as instead of several additives one uses only one - **HYDROEFFECT**);

NOTE: When using **HYDROEFFECT** other supplements simply are not needed. However, if due to any reason there is still a necessity to use other additives along with **HYDROEFFECT**, it is mandatory to conduct preliminary tests for final properties of the resulting material.

- reduces the cost of material's production.

To illustrate concrete advantages of **HYDROEFFECT** we give here the results of its impact on the formulas and properties of hydraulic concrete (for a variable water level zone).

	Standard concrete	Concrete with HYDROEFFECT
Consumption of Materials per 1m³ of concrete		
1. Cement M400	492 kg	300-350 kg
2. Water	204 kg	100-130 kg
3. Gravel	1092 kg	1200 kg
4. Sand	600 kg	850 kg
<u>Classes и Grades</u>		
5. Cement	M400	M400
6. Concrete Class	B25	B35-B40
7. Water-resistance mark	W8	W10
8. Frost resistance mark	F200	F300- F400
9. Workability	П3	П4-П5
<u>Additives</u>		
	Superplasticizer C-3-1.5kg Densifier (HK) - 5 kg Water-repellent (ГКЖ-11K) - 1 kg	« HYDROEFFECT » - 0.5-1kg