

COMPARING HYDROEFFECT, KALMAFLAX AND PENETRON MATERIALS

Taking into account a high competition of water-proofing compositions in the world market, we should analyze the performance of the materials such as Kalmaflax and Penetron produced by well-known companies.

It should be noted without criticizing that both compositions give a certain result by mud injection concrete pockets formed by dissolving Kalmafleks and Penetron powders by appropriate salts of water slurry.

Considering the fact that these compositions consist highly of hydrophilic components it is impossible to obtain hydrophobic surface with their help. In any case water will wet the treated surfaces and spread over them (i.e. the contact angle as the objective evaluation of the surface hydrophobicity in this case equals 0° that means a complete absence of hydrophobicity occurs). By virtue of using the technology applied with Kalmaflax and Penetron materials which is to provide the need for constant wetting of the treated surface, a hydrophobic surface is out of the question.

It is important to consider that due to blockage of pockets by water slurry – penetration of water into the interior of the concrete will be really slowed down, but in any case it is not stopped – especially (taking into account the small size of water molecules) in the presence of hydrostatic pressure.

Moreover, having been made from a supersaturated aqueous solution of salts, water slurry "protection" in the form of water-soluble crystals is constantly being exposed to the water accumulated in the reservoir, which inevitably will be gradually dissolved. Over time this process will leave pockets – once filled with crystals while being processed – completely vulnerable to water molecules. This process is inevitable just because of the chemical nature of the water-soluble hydro grains.

The sufficient complexity (multi-stage) of the technological process of Kalmaflax and Penetron composition usage in the construction should be also taken into account.

So, considering the facts mentioned above, "HYDROEFFECT" water repellents and admixes offered by us have the following advantages:

- easy application technology
- reliability
- durability of the coating
- economic benefits.

Owing to the hydrophobic effect protective layers obtained by using "HYDROEFFECT" have high water repellency (contact angle for surfaces treated with "HYDROEFFECT" material is more than 100°), what is impossible to obtain by using Kalmaflax and Penetron compositions. A protective layer of "HYDROEFFECT" can neither be washed off, nor weakened. Hydrophobicity – is its permanent natural state. One can only disrupt surface hydrophobicity by destroying the hydrophobic layer mechanically, for instance, while dismantling concrete structures.