

# SELF-CLEANING NANO SHIELD

Maintains the appearance of the insulated facade and extends its life with a guarantee of 10 years

Do you already **have an insulated facade** or are you planning to insulate it?

Do you want your insulated facade to last **more than 25 years**?

**Do you care** what the facade of your house looks like?



**SUPER-STRONG  
SELF-CLEANING  
EFFECT**

Condition of the insulated facade BEFORE / AFTER cleaning and treatment with functional coating FN®

If you answered **yes** to any of the questions, we have a **long-term solution** to the problem of insulated facades.



# Problems of insulated facades

- Susceptibility to staining and attack by microorganisms
- UV radiation fades colors and breaks down the binder of paints and facade adhesion
- High thermal stress creates cracks and accelerates aging
- Cleaning the facade with pressurized water and chemicals abrades the facade surface and speeds up its erosion

- 1. Susceptibility to staining and attack by micro-organisms:** If the sun shines on the surface of a warm facade, it will heat up very quickly. It cools very quickly once the sunshine ceases. Insulated areas then have can maintain lower surface temperatures than the surroundings. On uncoated surfaces, dust particles settle more quickly and condensate air humidity. Therefore, they are more rapidly soiled by atmospheric contaminants and create a favorable environment for the settling of microorganisms. The susceptibility of insulated facades to soiling, mold growth and algae is therefore their natural property!
- 2. High thermal stress and UV radiation accelerate aging:** Rapid temperature variation of the surface of the insulated facade causes its mechanical stress. This over time leads to the formation of micro-cracks through which water enters the insulation system and molds penetrate. High thermal stress, together with the aggressive effects of ultraviolet radiation (UV), accelerates the breakdown of the facade top layer. Moreover, UV radiation is the main cause of fading of facade colors.
- 3. The disintegration of the façade is accelerated by pressure water and chemical cleaning.** Facades of houses in large cities and industrial areas are quickly clogged with soot and other dirt dispersed in the air. Especially the northern and western sides of the facades of insulated houses often grow with mold and algae. If the homeowner wants to keep his appearance clean, he has to clean the facade. Each traditional cleaning removes dirt from the facade surface by mechanical and / or chemical treatment. However, this can never be done without wear on the facade surface layer. The cleaning thus contributes to the erosion of the thermal insulation of the facade. However, if the facade is not cleaned for a long time, dirt penetrates deeper layers and the surface cannot be cleaned without apparent damage.
- 4. The need for consistent quality care = higher maintenance costs:** insulated facades are more complex in design than facades without insulation. Therefore, even a well-insulated facade requires continuous, professionally qualified care.



Growth of fungi and algae

Degradation of facade rendering after 12 years



Facade attacked by green algae - after cleaning



# The most common mistakes in the care of insulated facades

- The condition of the facade is not regularly checked
- Troubleshooting is too late
- The facade is roughly cleaned and left open for more erosion

**A. The condition of the facade is not regularly checked** and defects (cracks, peeling parts of the facade and other mechanical damage) are not repaired without delay.

**B. Cleaning the insulated façade and repairing the defects** of its cohesiveness is only approached at a time when it “cannot be seen anymore”. This is usually eight or more years after the implementation of insulation. Then it is usually necessary to solve several problems:

- The facade rendering falls in more places and to a greater extent
- The adhesion of the top layer to the insulator is significantly impaired (especially for acrylic renderings and paints)
- The dirt has penetrated deep and cannot be cleaned
- The mold grew into the depth of the facade

**C. The facade is only cleaned** – without repairing minor defects and penetration, or painting with the facade paint – results in stress on the facade, opening fissures for more intense weather erosion and even faster onset of microorganisms.

# How to maximize the life of the facade

- Protect from UV radiation
- Avoid infestation by microorganisms
- Minimize erosive effects of cleaning
- Minimize thermal stress
- Repair any defects immediately

**A. Protect the facade against the degrading influence of UV radiation** (use of mineral plasters and mineral colors with mineral pigments or photocatalytic UV protection system).

**B. Protect the facade against attack by microorganisms** (use of materials that are naturally less susceptible to attack by microorganisms (mineral plasters and paints), or contain biocidal agents, or protect the facade with a photocatalytic effect.

**C. Minimize erosive effects of cleaning** (after each cleaning, clean the surface with a primer or facade paint, apply special protective coatings, or highly effective photocatalytic surfaces to keep the facade clean for a long time.

**D. Protect the facade against excessive thermal stress** by choosing light colors.

**E. Regularly check the condition of the facade and repair any defects immediately.**



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## FN® functional coating – five solutions in one

- Protects against UV radiation
- Prevents mold and algae from settling
- The self-cleaning function prevents spotting
- Significant reduction in the need for cleaning slows down facade erosion
- Bright color tones reduce thermal stress on the facade

1. Extremely effective long-term protection **against UV radiation** (protection against the breakdown of binder plaster and facade paints and against color fading).
2. Long-term physical protection against attack by microorganisms (**mold and algae do not grow on the facade**). Increased resistance to cobweb settling.
3. Long-term active surface protection **against soot and dirt scattered in the air** – sticky dirt components are distributed with the help of daylight energy and the rest of the dust is removed by rain and wind. Vertical areas remain clean for 10 years or more.
4. **Long-term clean facade** – cleaning is only carried out locally at places where rainwater cannot wash away dust. Cleaning can be done by means that do not destroy the facade surface.
5. FN® functional protective coatings are produced in a **wide range of light shades** that reduce thermal stress on the facade.
6. Czech invention, **internationally patented**, developed and tested in cooperation with J. Heyrovsky Institute of Physical Chemistry at the Academy of Sciences, Prague



GUARANTEE OF  
EFFECTIVENESS



UV-FILTER  
COLOR  
STABILITY



SUPER-STRONG  
SELF-CLEANING  
EFFECT



EASY  
APPLICATION



OVER 350  
COLORS

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