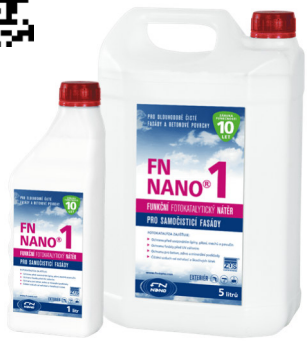
TECHNICAL SHEET
FN NANO®1 FUNCTIONAL COATING



⇒ **Protective photocatalytic coating for permanently clean facades, walls, concrete structures and other surfaces. Extends the life of the facade**
⇒ **Extraordinary suitable for insulated facades. Ensures active self-cleaning of the surface**
⇒ **from dirt and color fastness. It protects against micro-organism build-up (greening and blackening of the surface).**
⇒ **It forms an effective protection against UV radiation**
⇒ **Guarantee of functionality on vertical surfaces – 10 years**[1]

PRODUCT DESCRIPTION: The FN NANO®1 functional coating has been developed and certified specifically for the protection of concrete to which the coating layer is bonded. It is designed to be used primarily in exterior applications. It can also be applied to raw masonry surfaces, plasters, acrylic and silicate paints and common building materials that do not repel water. It works on the basis of a physical phenomenon called photocatalysis. The coating is activated by the ultraviolet component found in daylight and has highly effective protective and self-cleaning properties. Its protective and self-cleaning properties **are many times superior to chemical products in their long-term effectiveness**. **High breathability and vapor permeability.**

PHOTOCATALYSIS PROVIDES:
- **Protection against dirt, mold, moss, and spider webs**
- **Protection of facades from UV radiation**
- **Protection of concrete, masonry, acrylic and mineral substrates**
- **Cleaning of pollutants and harmful substances from the air**

THE PHOTOCATALYTIC EFFECT IS PERMANENT, INEXHAUSTIBLE AND DOES NOT DIMINISH OVER TIME. ALL PROTECTIVE FUNCTIONS ARE MAINTAINED THROUGHOUT THE LIFE OF THE COATING.

APPEARANCE OF THE COATING: The coating is semi-transparent with a white hue. Transparency approx. 60-65 %. For facades can be colored in pastel shades. The thickness of the coating layer is optimally 5-20 microns. The layer is active immediately after daylight (exterior) or artificial light with a UVA spectrum (interior). The maximum coating efficiency is achieved at light wavelength of 365 nm. The coating is mature after 24 hours and fully functional after the first rain or water rinse.

COMPOSITION: Purely water-based composite coating. It contains an untreated photocatalyst and inorganic binders. The color variants also contain mineral pigments. The very high concentration of the photocatalyst (50-70 g/l) ensures long-lasting and flawless protection and a particularly high self-cleaning efficiency.

APPLICATION PROCEDURES: **Before each application, the coating must be shaken very thoroughly (30 - 40 seconds) in the original container. Perfect shaking is necessary to achieve even mixing of the insoluble particles in the coating. This is crucial to ensure the proper function of the protective coating.** Before applying the FN NANO® technology, the primer must be perfectly cured. On fresh painting, apply at the earliest after 24 hours, but better after 48 hours.
It is important that the coating is always in motion and does not sediment. In practice, this means pouring off only a small amount of already thoroughly mixed coating before applying. Shake again before pouring again. To achieve a nice appearance, always apply as **thin but continuous and even a coat** as possible, allowing it to dry completely before the next coat.

COMMON APPLICATION PROCEDURE:

INTERIOR: For masonry and plasterboard substrates – we recommend first to remove biological contamination (e.g. mold) by healthy and ecologically suitable means (preferably water-based), let it dry thoroughly and then apply the first coat of FN NANO® 1 to prevent the deposition of microorganisms. After drying apply the second and third layers with a functional coating FN NANO® 2 or FN NANO® 3. To ensure full functionality, it is necessary to ensure access to daylight or ultraviolet radiation with a minimum intensity of 0.2W/m^2.

EXTERIOR: It is recommended to first gently wash substrates that are contaminated or infected with microorganisms with water and use a deep penetrating coating. After drying, it is possible to apply a facade paint (silicate or acrylic), which does not repel water. After thorough drying of the facade paint, it is possible to apply the functional coating FN NANO® 1. A detailed procedure for the application of FN NANO® functional coatings is published on the website in the section FN NANO® Technology/Hints and Tutorials. (www.fn-nano.com)

SYSTEM APPLICATION PROCEDURE FOR VERTICAL FACADE AREAS (NEW AND RENOVATED):
The preparation of the substrate is similar to the example of a common application procedure for the exterior.
1. First, impregnate (seal) with FN® Primer according to the instructions for use given in the relevant technical data sheet. [2]

2. After the impregnating coating has cured, apply two coats of FN® PAINT facade paint in accordance with the instructions for use given in the relevant technical data sheet. [2]
3. After drying and maturation of the FN® PAINT paint, apply the functional coating FN NANO® 1 in three even layers.

Spraying – in three layers to form a thin uniform layer. Pneumatic spraying or high-pressure airless spraying can be used.

Roller application – in three coats is suitable for virtually all surfaces. Requires some skills to make a homogenous layer.

Brush application – in three coats, it is suitable for hard-to-reach areas, deeper diffusion of the active substance and for treating areas that may be affected by mold, for example.

- Cover all surfaces that will not be treated with FN NANO® layer
- The layer must be allowed to dry between coats
- Do not apply in adverse weather conditions.
- Air and substrate temperature between + 10 °C and + 25 °C and relative air humidity maximum 75%.
- Do not apply on a water-repellent (hydrophobic) surface.

Dilution: Don't dilute!
Consumption: Typically, 1 liter/7-10 m2 of the final film (3 layers). Depending on the absorbency of the substrate, material consumption may vary.
Cleaning tools: With water – as soon as possible after use.

PRODUCT FEATURES:
Low viscosity liquid, product density: 1.071 g/cm^3, without volatile organic compounds (VOC).
High vapor permeability of the coating (class V1- High).
The thickness of the film is optimally 5-20 micrometers.
The coating is frost-resistant after maturing, it is not washable.
Adhesion to concrete ≥ 2.5 MPa (ČSN EN 1542: 2000)
Non-flammable liquid in the sense of ČSN 65 0201

PACKAGING: Plastic containers 1 and 5 liters

STORAGE: Maximum 3 years from date of manufacture at 10-25 °C, in unopened original packaging. In the case of colored variants, it is recommended that, if stored for more than 2 months from the date of manufacture, after thorough mixing in the bottle (canister), the suspension (coating) is mixed with a stick blender to ensure perfect distribution of the pigment in the liquid. **Must not freeze.**

SECURITY MEASURES AND ECOLOGY: More detailed information can be found on the packaging and in the Safety Data Sheet of the product – available on request.

More information:
The information provided in this technical sheet is compiled on the basis of laboratory knowledge and our professional experience in order to achieve the best possible results at a professional level when using the product. Depending on the homogeneity and contamination of the substrate, optical defects may occur in the final coating We do not accept any liability for damage caused by incorrect use of the product or its improper selection. Therefore, we recommend professionally and correctly testing our materials to see if they are suitable for the intended purpose of use under the given conditions.

This data sheet expires when an update is issued. The manufacturer reserves the right to make subsequent changes and additions.
Last updated: February 2022.

THE OWNER OF THE PATENT AND THE MANUFACTURER:
Advanced Materials-JTJ, s.r.o., Kamenné Žehrovice č.p. 23, 273 01, Czech Republic, www.amjtj.com

DISTRIBUTOR:
FN-NANO s.r.o. , Kamenné Žehrovice č.p. 23, 273 01, Czech Republic, www.fn-nano.com

CZECH INVENTION - PROTECTED BY PATENT AND TRADEMARK FN NANO® - VERIFIED BY MORE THAN TEN YEARS OF EXPERIENCE

[1] The guarantee is valid only if the specified application procedure is followed by a professional certified company
[2] Technical data sheet can be downloaded in the section FN NANO® Technology/Documents - technical data sheets www.fn-nano.com