



## TECHNICAL SHEET

### FN NANO®2 FUNCTIONAL COATING

- ⇒ Protective photocatalytic coating for effective air cleaning and for permanently white and clean facades, walls, concrete and other surfaces
- ⇒ Photocatalysis ensures active self-cleaning of the surface from dirt and protects surfaces against the build-up of microorganisms
- ⇒ It forms an effective protection against UV radiation and cools surfaces. It can be used indoors as an effective air purifier



- ⇒ **Guarantee of functionality on vertical surfaces – up to 15 years<sup>[1]</sup>**

**PRODUCT DESCRIPTION:** The FN NANO®2 functional coating has been developed and optimized for air cleaning and anti-microbial functions. FN NANO® 2 is inert and contains no organic substances. It does not release any harmful substances into the environment. It is designed for both exterior and interior use. It works on the basis of a physical phenomenon called photocatalysis. The coating is activated by the ultraviolet component contained in daylight and has highly effective protective and self-cleaning properties. **Unlike chemical products, its properties are inexhaustible.** It guarantees extremely effective protection of the substrate and is often used as an **effective technology to reduce the risk of airborne disease transmission in interiors.**

#### PHOTOCATALYSIS PROVIDES:

- Purification of the air from airborne viruses, bacteria, allergens
- Lower transmission of airborne infectious diseases and reduced asthma risks
- Removal of odors and reduced occurrence of oily dirt
- High effectiveness against molds, fungi, algae and other microorganisms
- Environmentally friendly solution without chemicals, purely physical effect
- Effective self-cleaning protection for white facades
- Maximum UV protection – prevents material degradation

**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 white color and its surface is slightly chalky. Transparency approx. 50 %. It is suitable for all porous surfaces where we want to achieve a beautiful and clean appearance for as long as possible, without it being attacked by algae, mold, fungi and other microorganisms. The thickness of the coating layer is optimally 5-30 microns. The layer is active immediately after the impact of the ultraviolet component contained in daylight (exterior) or artificial light with a share of the UVA spectrum (interior). The maximum efficiency of the coating is achieved at light wavelength of 365 nm. The coating is cured after 24 hours.

**COMPOSITION:** Purely water-based composite coating. It contains an untreated photocatalyst and inorganic binders. It contains high concentrations of photocatalyst (70-100 g/l), which ensures its long-term flawless protective function and a particularly high self-cleaning efficiency.

#### METHOD OF APPLICATION:

**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 not suitable for application on a base of clay glued paints!**

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. 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 layer.

#### COMMON APPLICATION PROCEDURE:

**INTERIOR: For masonry and plasterboard substrates** – We recommend first removing the biological contamination and allowing the substrate to dry thoroughly. Then we use the system solution <sup>[1,2]</sup> (sealant FN® Primer, silicate paint FN® Sensitive and functional coating FN NANO®2). In case of problems with mold, fungi, etc., we recommend to first remove biological contamination, let it dry thoroughly and then apply one coat FN NANO® 1 as a prevention against the deposition of microorganisms, then apply two more coats of functional coating FN NANO® 2. To ensure full functionality in interiors, it is necessary to ensure access of ultraviolet radiation with a minimum intensity of 0.2W/m<sup>2</sup> to the created FN NANO® surface.

**EXTERIOR:** It is recommended to first gently wash substrates that are contaminated or infected with microorganisms with water and use a deep penetrating coating (sealant). After drying, it is possible to apply a facade paint (silicate or acrylic), which does not repel water. After



thorough drying of the façade paint, it is possible to apply FN NANO® 2 functional coating. 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](http://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. <sup>[2]</sup>
2. After the impregnating coating has dried, apply two coats of FN® PAINT facade paint in accordance with the instructions for use in the technical data sheet. <sup>[2]</sup>
3. After perfect drying and maturation of the FN® PAINT, apply the functional coating FN NANO® 2 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 = 10 m<sup>2</sup> of protective surface in three coats. On a smooth surface in the interior 10-12 m<sup>2</sup>, on facades and walls of houses, depending on the surface structure, we have to consider a higher consumption – on average about 7-10 m<sup>2</sup> of coated area from 1 l in 3 layers.

**Cleaning tools:** With water – as soon as possible after use.

#### PRODUCT FEATURES:

Low viscosity liquid, product density: 1.0713 g/cm<sup>3</sup>, without volatile organic compounds (VOC).

High vapor permeability of the coating (class V1- High), S<sub>d</sub>[m] = 0,06.

The thickness of the film is optimally 5-20 micrometers.

It does not contain any organic compounds (ISO 16000-10, ISO 16000-11). The applied coating is completely safe.

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

**Manufacturer's recommendation for the use of antibacterial functional coating FN NANO® 2 in healthcare facilities according to Decree**

**No. 306/2012 Coll.:** Renewal of FN NANO® 2 once every five years – intervention and operating theatres, intensive care units, sampling rooms, laboratories, infectious diseases wards, pediatric and neonatal units. Renewal of FN NANO® 2 once every seven years - other than in non-health care facilities.

**PACKAGING:** Plastic containers 1 and 5 liters

**STORAGE:** Maximum 3 years from date of manufacture at 10-25 °C, in unopened original packaging. Before use, the mixture must be mixed very thoroughly by shaking in the original packaging. **Must not freeze!**

**SECURITY MEASURES AND ECOLOGY:** The coating does not contain any organic compounds in accordance with European and world trends in environmental and health protection. The applied coating is inert and completely safe. It does not release any harmful substances into the environment. 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: March 2024.*

#### THE OWNER OF THE PATENT AND THE MANUFACTURER:

Advanced Materials-JTJ, s.r.o., Kamenné Žehrovice č.p. 23, 273 01, Czech Republic, [www.amitj.com](http://www.amitj.com)





**DISTRIBUTOR:**

FN-NANO s.r.o. , Kamenné Žehrovice č.p. 23, 273 01, Czech Republic, [www.fn-nano.com](http://www.fn-nano.com)

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

<sup>[1]</sup> The guarantee is valid only if the specified application procedure is followed by a professional certified company

<sup>[2]</sup> Technical data sheet can be downloaded in the section FN NANO® Technology/Documents - technical data sheets [www.fn-nano.com](http://www.fn-nano.com)

