

Nano Glass Coating

n-glaskoat_03

**Water Repellent | Dust Repellent | UV Protection | Transparent | Easy
Clean | Anti-Bacterial | Anti-Corrosive |**

Innovation Center for Applied Nanotechnology - I-Can Nano™

Based on *Chemical Nanotechnology*, the synthesized product **I-Can™ n-glaskoat_03** contains specially modified *Functional Nano Particles* that are specially linked into a Silicon Matrix in a Solvent Base. NANO GLASS COATING material, when applied on Glass surface forms a thin layer with Excellent Roll-Off behavior for water, simplifying the removal of dirt and scaly residue.

Benefits and Advantages

- Water repellent (hydrophobic) and Dust repellent.
- UV Protection
- Conserves Air-Condition Load
- Protects glass from corrosion (acid rain etc.)
- Easy application through spraying, polishing, immersion, smearing etc.
- Optically neutral (colorless, transparent).
- Curing at room temperature.
- Stable at varying temperatures.
- Low Cleaning and Maintenance requirements.
- Retains the quality of surface.
- Ecologically beneficial & biologically safe.
- Resistance against: Dirt, Algae, Scales etc.



Areas of Application

- Glass facades/ Glass roofs
- Window panels/glass doors
- Frosted glass
- Decorative glass
- Glass shower cabins
- Automobile Glass
- All exterior glasses
- Architectural glasses



Application Steps

The product must be used as delivered (The material must not be diluted further.). Essentially, the applications steps are:

1. Cleaning of the glass surface,
2. Application of Coating,
3. Curing,
4. Polishing.

Cleaning of the Glass Surface

- ☀ Prior to application it must be ensured that the Glass Surface is free of all loose particles/ dust etc.
- ☀ If the Glass Surface is very dirty or oily (Fingerprints/Stains) it must be cleaned with a cleaner (detergent wash/acetone).
- ☀ If glass was stored over a longer period of time, it must be cleaned e.g. a glass washing line.
- ☀ Ensure before application, the Glass Surface is clean and completely dry - if necessary, wipe with little acetone.

Temperature/Humidity Conditions

- ☀ Ambient temperature: Coating can be applied in ambient temperature conditions (i.e. 10 Deg C to 40 Deg C). In this case, drying time would be around 3 hours.
- ☀ Humidity level: 60% to 80% . Deviating conditions can influence the formation of hydrophobic effect and drying time.

Other Conditions

Coating should be applied and dried in a dust free environment, preferably in clean room conditions.

Application of coating solution

- ☀ Small quantity of the material has to be applied on the Glass Surface (Approximately about 15 ml/m², the exact amount need to be determined on site by a simple Roll -Off Test).
- ☀ Material can be applied by Spraying, Brushing, Rolling, Dipping or Smearing using soft cloth/tissue paper/sponge.
- ☀ It is recommended to apply the material in small sections for efficient coating.
- ☀ Ensure that glass surface saturate with coating solution.

Curing

- Allow the coating to dry naturally for about 3 hours or the coating may be dried by placing the glass at ambient temperature of 80 to 125 Deg C.
- If drying process is natural and if the coating, due to different climatic conditions, does not dry up even after about 3 Hrs, then it needs to be wiped off/ polished until it completely dries out.

Polishing

- ☀ The material once applied need to be polished in circular motion using soft cloth/tissue paper. This can be done by polishing/ rubbing in circular motions until it completely rubbed off/dries out.

🌀 It is recommended to polish at least once to ensure quality of surface.

Test of Coating for water repellency

- 🌀 Once coated performance can be tested by pouring some water on the coated panels. If coating is done properly, water should form droplets and roll-off the glass surface and should not spread out into a uniform film.

Test Results on I-Can™ n-glaskoat_03 coated glass

Sl. No.	Test	Result
1.	Contact Angle of water droplets	118 ⁰
2.	Thickness of coating	53 ⁰ A
3.	Light Transmission (Transmitivity)	No Change
4.	Abrasion Resistance	Improved
5.	Optical Distortion	No Change
6.	Secondary Image Separation	No Change
7.	Identification of Colors	No Change
8.	Cold Test	Pass
9.	Bake Test	Pass
10.	UV Radiation Test	Pass
11.	Humidity Test	Pass
12.	Cyclic Test	Pass
13.	Water immersion test	Pass
14.	Boil Test	Pass
15.	Wiper Test	More than 330 hrs.
16.	Temperature withstand ability	Above 300 ⁰
17.	Scratch Resistance	Improved
18.	Thermal Insulation 'U' value	No Change in 'U' value
19.	Contact angle post abrasion test	No significant change
20.	UV Protection	60% blocking of UV Rays

Why Nano Glass Coating from I-Can Nano™?

- Performance of I-Can™ n-glaskoat_03 is robust due to effects of INORGANIC NANO PARTICLES incorporated in non-polymer based matrix i.e. it is a dispersion of functionalized nano-particles in a solvent base. This solvent acts as carrier in spreading across the applied surface. Over the curing period (2 to 3 hrs.) nano-particles self-assemble across the surface and bonds with the surface. The solvent evaporates over the curing period leaving only INORGANIC NANO PARTICLES that forms a uniform thin layer of 50 - 60 nm over the surface by forming bond with silica of ceramic surface. For

this scientific reason, life of the coating would be very long. **I-Can Nano™** has developed the technology to combine many properties into one nano-particle. Each such nano-particle exhibits property of water/dirt repellency, UV protection, anti-bacterial, anti-corrosion etc.

- **I-Can™ n-glaskoat_03** is optically neutral i.e. completely transparent and while applied over glass surface, no visible difference observed after on coated surface and due to UV protection coated glass conserves air-condition load.
- Coating contains functionalized nano silver that imparts total bacteria-free surface and so it is anti-foul & anti-algae.
- Because of anti-sticking surface dirt does not stick on the surface. It is easy clean and remains stain-free.
- Surface becomes anti-corrosive and highly resistant to acidic & alkaline solutions. It protects corrosion of glass due to acid rain.
- High resistance to scratches & abrasion.

Why I-Can Nano™?

I-Can Nano™ has indigenously developed robust process technology to manufacture high quality & pure nano-materials with very wide range and also has developed the technology for manufacture of novel coating. This ensures robust performance of the nano glass coating.

Read carefully:

The information on this data sheet is based on the current status of technical development as well as our experience with the product. However, given the variety of surfaces and ambient conditions, the information provided on this data sheet shall in no way diminish the responsibility of the user to ensure with due care, that our product is suited for the intended purpose, surface and application conditions.

Since application and processing lie outside our purview, no manufacturer liability shall be derived from the information provided herein. Our General Terms and Conditions of business shall apply in all cases.

All information is subject to change without notice.

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