



NANOV**AULT**
COATINGS

TOMORROW'S PROTECTION APPLIED TODAY



INVISISHIELD

The use of solar power is rapidly increasing across the globe, and it is becoming a more common solution for residential, commercial, and industrial energy needs. To ensure that solar panels operate at their maximum efficiency, it is crucial to protect them from environmental factors such as dust, dirt, bird droppings, and other contaminants. Nanovault Coatings offers innovative nano-coating solutions designed to enhance the performance and longevity of solar panels, ensuring they absorb the maximum amount of sunlight and produce electricity efficiently.

WHY CHOOSE INVISISHIELD?

Invisishield provides innovative solutions that combine self-cleaning, anti-reflective, hydrophobic, and anti-dust properties to optimize solar panel performance. Our coatings are designed to:

- Increase light transmission for higher energy output.
- Reduce maintenance costs by keeping panels clean with minimal effort.
- Protect against environmental damage such as UV exposure, corrosion, and abrasion.
- Extend the lifespan of solar panels, ensuring long-term efficiency.

Key Benefits of Invisishield

1

HYDROPHOBIC SURFACE

- Repels water, preventing water spots and ice build-up.
- Ensures panels remain clean and functional in rainy or humid climates.
- Reduces the risk of micro-cracks caused by freezing water.

2

ANTI-REFLECTIVE COATING

- Increases light absorption by reducing glare and reflection.
- Enhances energy output by up to 5% in initial power generation.
- Improves performance in low-light conditions.

3

SELF-CLEANING PROPERTIES:

- Prevents dust, dirt, and organic contaminants from adhering to the surface.
- Rainwater easily washes away debris, reducing the need for manual cleaning.
- Ideal for regions with high dust or pollution levels.

4

DURABILITY AND LONGEVITY

- Resistant to UV radiation, extreme temperatures, and chemical corrosion.
- Provides long-term protection, increasing the lifespan of the panel to 25+ years.
- Maintains panel efficiency over time, ensuring a higher return on investment.

5

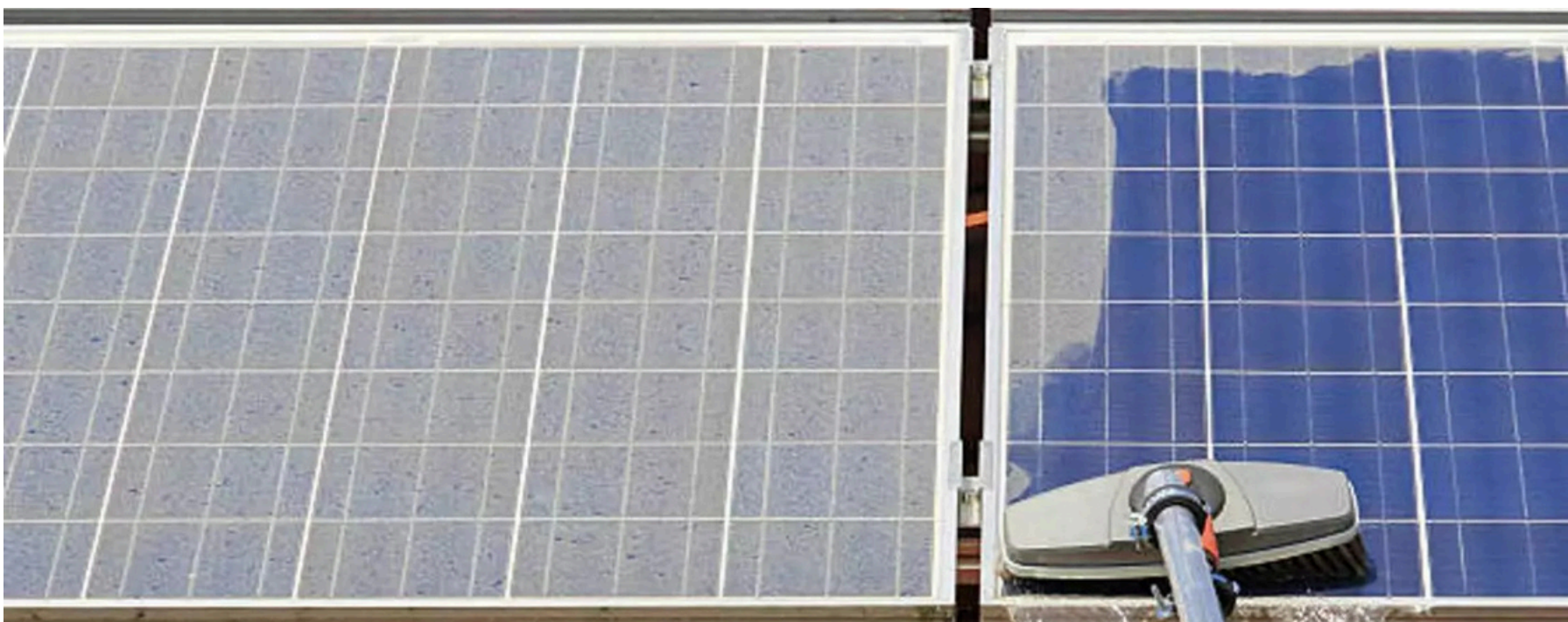
ANTI-DUST TECHNOLOGY

- Minimizes dust accumulation, which is a major cause of efficiency loss in solar panels.
- Particularly effective in arid and desert environments where dust storms are common.
- Reduces the frequency and cost of cleaning operations.



How Invisishield Work

- Our nano-coatings are applied as an ultra-thin, transparent layer that bonds chemically with the surface of the solar panel. The nanoparticles create a seamless barrier that repels contaminants while enhancing light absorption. The coatings are designed to:
- Repel Dust and Dirt: The low surface energy and textured surface prevent particles from adhering.
- Increase Light Transmission: Anti-reflective properties reduce light loss due to reflection.
- Protect Against Environmental Damage: The durable coating withstands harsh weather conditions and UV exposure.



Application of **NANOVAULT COATINGS**

Nanovault Coatings are suitable for a wide range of solar panel applications, including:

- 01 Utility-Scale Solar Farms**
- 02 Residential & Commercial Rooftop Solar Systems**
- 03 Industrial Solar Installations**
(e.g., cement factories, steel plants, electrolytic aluminum plants)
- 04 Desert and Arid Region Solar Farms**
- 05 Fish-Light Complementary Photovoltaic Systems**

The TECHNICAL SPECIFICATIONS

Feature	Invisishield	Competitor A	Competitor B
Self-Cleaning	Yes	Limited	Yes
Anti-Reflective	Yes ($\geq 3.5\%$ gain)	Yes ($\leq 2.5\%$ gain)	Yes ($\leq 3.0\%$ gain)
Anti-Dust	Yes	Limited	Yes
Hydrophobic	Yes	Yes	Yes
Wear Resistance	High	Medium	High
Panel Durability	25+ years	10-15 years	20+ years
Application Method	Spray, Roll, or Brush	Spray	Spray
Curing Time	24 hours	24-48 hours	24 hours



CASE STUDIES

DESERT SOLAR FARM

Location: Gobi Desert, China

Challenge: High dust accumulation reducing efficiency by up to 30%.

Solution: Applied Nanovault anti-dust and self-cleaning coating.

Result: Power generation increased by 22.41% in low-pollution areas and 68.08% in high-pollution areas.

INDUSTRIAL ROOFTOP SOLAR SYSTEM

Location: Steel Plant, South Africa

Challenge: Dust and iron powder contamination from industrial processes.

Solution: Applied Nanovault anti-static and anti-dust coating.

Result: Reduced cleaning frequency by 50% and increased energy output by 5.51%

RESIDENTIAL SOLAR INSTALLATION

Location: Coastal Region, Australia

Challenge: Bird droppings and salt spray reducing panel efficiency.

Solution: Applied Nanovault hydrophobic and self-cleaning coating.

Result: Panels remained clean with minimal maintenance, and energy output increased by 6.68%.



APPLICATION PROCESS

- Surface Preparation: Clean the solar panels to remove existing dirt and contaminants.
- Coating Application: Apply the coating using spraying, rolling, or brushing methods.
- Curing: Allow the coating to cure for 24 hours.
- Result: Enjoy enhanced efficiency and reduced maintenance for years to come.

WHY NANOVAVULT COATINGS?

Nanovault Coatings delivers proven results, with our advanced nano-coatings rigorously tested to boost solar panel efficiency across diverse environments, from arid deserts to industrial zones. By significantly reducing dust buildup, organic contaminants, and light reflection, our solutions ensure your panels operate at peak performance. Beyond efficiency, we prioritize cost-effectiveness—minimizing manual cleaning and maintenance expenses to deliver a rapid return on investment. Environmentally conscious clients will appreciate our eco-friendly formulations, which are non-toxic, safe for ecosystems, and align with sustainable energy goals. Additionally, we offer custom solutions tailored to your project's unique challenges, whether it's combating salt spray in coastal areas or industrial pollutants. With Nanovault, you're not just protecting panels—you're investing in smarter energy, long-term savings, and a greener future.

Click here to view our
[Website](#)



GET IN TOUCH

For **more information** about Nanovault Coatings and how we can improve your generation capacity, contact our team today!

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