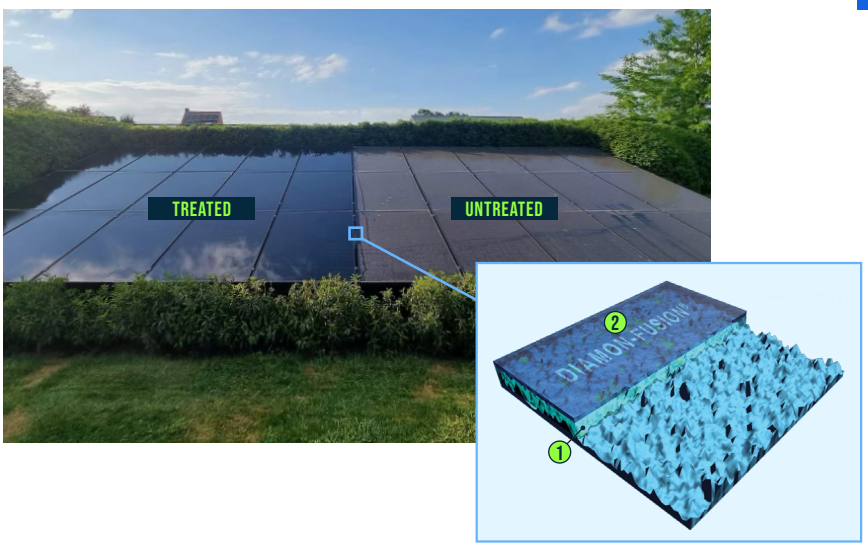
DIAMON-FUSION®

TECHNICAL OVERVIEW & FEATURES

TECHNICAL SUMMARY

Untreated glass is naturally porous, which means at a microscopic level the surface is very jagged. As a result, mineral deposits, contaminates and other environmental pollutants can penetrate the glass surface, causing stains and corrosion. Over time, this makes the glass more difficult to clean, leading to irreparable damage that reduces panel efficiency, production and lifespan.



PROBLEM

At a microscopic level, glass has thousands of peaks and valleys, making it easily contaminated. This causes PV glass soiling and transparency issues that negatively affect system functionality.

SOLUTION

Diamon-Fusion is an optically clear, low-maintenance coating that fills in the peaks and valleys of the surface by utilizing a simple two-stage chemical application process.

HOW IT WORKS

1. **Fill & Bond**
   The first coating application anchors deep into glass pores, smoothing out the surface by bonding directly with the silica atoms.

2. **Cap & Seal**
   The second coating “caps” the entire chain of bonded atoms from step one. This unique process has a lasting effect that dramatically increases glass hydrophobicity, durability and performance.

THE SCIENCE OF DIAMON-FUSION

Nanochemistry

The chemical reaction bonds to form an ultra-thin protective layer of optically clear durable material. This “web-like” nanostructure makes the surface significantly more resistant to weathering and much easier to clean. This method is done at a nanoscale of approximately 1/1,000,000,000 M, or 1 billionth of a meter.

Covalent Bond

The patented Diamon-Fusion process creates a covalent bond, meaning the coating shares the electrons within the glass itself, thus becoming a part of the glass at a molecular level. Covalent bonds are approximately 10 times stronger than hydrogen-bridge bonds, which are commonly present in most water repellent coatings.

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FEATURES & BENEFITS

Ultra-hydrophobic
Repels water

Oleophobic
Repels oils

UV resistant
Won't break down in sunlight

Temperature resistant
Up to 600° F / 325° C

Increases emissivity
Makes glass more brilliant

Optical clarity
100% optically clear

Scratch resistant
Prevents abrasion and scuffs

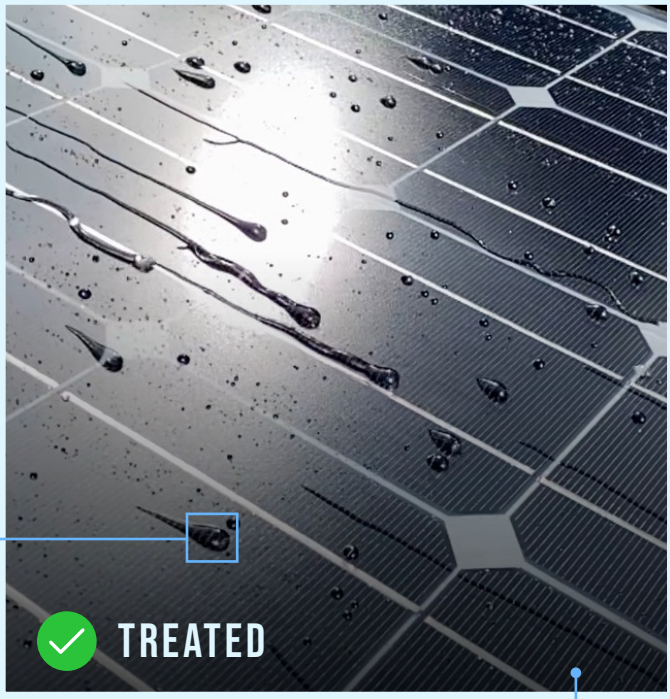
Chemical resistant
Acid resilient

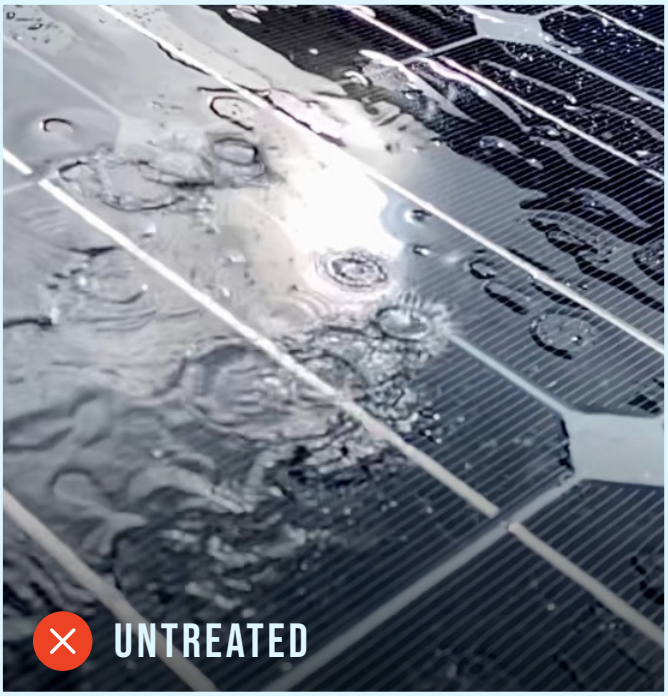
Environmentally friendly
No harsh chemical cleaners needed

Simplifies cleanings
90% easier to clean

Impact resistant
Helps prevents chipping

Coating thickness
< 40nm (nanometers)





>100°
Contact angle
Measures how high a bead of water stands on a surface. It specifically measures the angle created between the edge of a drop of liquid and the surface of the substrate. The more repellent a surface is to that liquid the higher the contact angle.

<15°
Sliding angle
Measures the smoothness of a surface by placing a drop of water at the end of the glass and tilting the glass until the drop begins to slide. The tilt of the glass at that instant determines the sliding angle, also known as the coefficient-of-friction (COF). The lower the sliding angle, the smoother the surface.

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