The high investments in large solar farms, and solar power stations is only sustainable when enough sunlight is available. Such locations are usually dry, hot and dusty places.

NG 1314/D does not only offer long term asset protection against the impact of weathering on the glass, but also improves energy efficiency even without regular cleaning. Exposed weathering showed, that the loss of energy output was up to 60% higher on uncoated surfaces.

**NG 1314/D SOLAR PANEL PROTECTION**

**FOR MAXIMUM EFFICIENCY AND PERFORMANCE OF PHOTOVOLTAIC SYSTEMS AND SOLAR MIRRORS**

**BENEFITS:**

Nanovations NG1314/D is the most durable protective after market coating for solar panels and mirrors. The multi-functional, ultra-thin coating reduces dirt and dust accumulation and at the same time provides a scratch resistant easy to clean protection. Coated panels have a higher power output and more consistent energy efficiency. The coating protects the glass from erosion, and from stubborn staining from salt spray and mineral deposits.

Unlike any other product, NG 1314/D is inorganic and comes with the natural UV resistance of colloidal silica sol material. Such proven and reliable materials can handle harsh conditions from sub zero to extreme hot environments. NG 1314/D can be used solar mirrors as well.

**TECHNICAL PROPERTIES:**

- Colloidal silica sol gel solution
- Ultra-thin, less than 60 Nm
- Cures in room temperature in seconds
- Industrial size application with spray or roll on
- Water repellent, very low roll off angle
- Low dust accumulation effect
- Easy to clean effect
- Fast cross linking with the substrate.
- Improved scratch resistance
- High durability, long lasting
- Invisible, ultra thin
- Nano structured, inorganic sol gel.
- Can be applied over ARC on Solar panels
- Cost effective, highest coverage available
- Up to 14,000 sq. ft. / gallon, 400 m2 / litre
- Outstanding UV resistance
- Heat resistant
- Up to 4 x more abrasion resistant
- Hardness up to 7 on Mohs scale
- Invisible, unchanged transmission rate

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![Loss in energy output within a 6 month test. Ref. cleaned daily](image)

**Loss in energy output within a 6 month test. Ref. cleaned daily**

Uncoated not cleaned  |  uncoated reg. cleaning  |  NG 1314/D not cleaned  |  NG 1314/D reg. cleaning
---|---|---|---
8%  |  6%  |  4%  |  2%
0%  |  2%  |  4%  |  6%  |  8%
NG 1314/D SOLAR PANEL PROTECTION
FOR MAXIMUM EFFICIENCY AND PERFORMANCE OF PHOTOVOLTAIC SYSTEMS AND SOLAR MIRRORS

Physical Data
Measured at Standard Test Conditions (STC)

- Appearance: Clear liquid
- Storage shelf life: min 2 years
- Application method: Spray and wipe, roller coater, Liscoc coating machines
- Colour: clear
- Chemical composition: Colloidal Silica Sol Gel
- Curing temperature: Room temp. For Infrared or UV curing please call
- Hardness: 6.5-7 Mohs room temp cured. up to 7 Mohs with IR curing
- Temperature resistance range: - minus 50 °C to + 300 °C
- Specific weight: 0.790 g / cbcm
- Coverage rate: up to 400 m2 / litre or up to 14,000 sq.ft / gallon
- Storage conditions: -5°C +/- 30°C
- Chemical storage for flammable liquid: class 3

Chemical Resistance
Measured at Nominal Operating Cell Temperature

- Cleaners: pH 3 - pH 11 resistant
- Hydrocarbon solvents, Diesel, Petrol, Kerosin resistant
- Hydrochloric and Sulphuric acid and citric acid 5 % resistant
- Break fluid, oil, hydraulic oil resistant
- Ethanol, Isopropanol Alcohols 99 % resistant

Tested Operating Conditions
Temperature: -40°C to +85°C
Exposed weathering Lab: Allunga Exposure Laboratory, Townsville Australia
Local Exposure: Sydney, Australia
Glass thickness: 3.20 mm

Warranties and Certifications
Warranties: 10 year product warranty on the coating.
Reference: IEC 61215, DIN 13300

Mechanical Data
- Abrasion resistance: Taber wet scrub resistance 40,000 - 80,000 cycles 500 g / brush
- Substrate: High transmission tempered glass
- UV resistance: Artificial 25 year simulation
  Over 10 year in real world projects, under Australian conditions
- Contact angle: 112 - 118 degree
- Roll off angle: 6 - 8 degree
- SaltSpray: 1000 hours

Test Images

* Visual loss of transparency abrasion test
100 cycles, wheel C 1, 500 g
Contact angle test with Rame-hart Geniometer
Nanovations, Serial No.1958
Taber test on 2 glass panels with 2 brushes 500 g each
40,000 cycles, Test method DIN EN 13300

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