

# NG 1314/D Coating

Ultra-thin, scratch resistant glass coating for solar panels and solar mirrors

## DESCRIPTION

**NG 1314/D** is the first coating of its kind that combines a harder than glass, hydrophobic "Easy to Clean" protection with an efficient, dust accumulation reducing function.

The inorganic bonding system offers a natural UV resistance, and up to 7 on the Mohs hardness scale.

The product is formulated in a way that enables it to penetrate into the porous surface structure of the glass. During the self-assembling curing process a hardening effect of the glass surface can be achieved. The ultra-thin film follows the Nano scale contour of the surface structure, rather than filling up the pores and microscopic valleys.

**NG 1314/D** is a colloidal coating solution where special formulated materials self assemble into a monolayer surface structure.

The application can be done with simple methods like spray and wipe on, or with automated methods like roller coater or Lisec coating machines.

After the curing, which is the evaporation of the carrier liquid, the material bonds to the surface and the coating will self assemble into the formulated and ultra thin coating layer.

Due to the low solid content in the solution, the final coating layers thickness is in the Nano scale, and completely invisible.

The formulation is designed to coat Nano-scale surface formations without filling the pores or creating a film like layer.

Colloidal sols can be used to improve the dirt and water repellent properties and wear resistance of Nano scale, ultra thin "Easy to Clean" coatings.

A heat curing or infra red curing step following the application can provide additional durability.

**NG 1314/D** self assembles faster and becomes more durable with additional curing, on substrates with a lower number of molecular bonding points available.

## RECOMMENDED FOR

**NG 1314/D** is recommended for:

- Heavy duty glass protection
- Solar Panels
- Solar collector mirrors
- Industrial applications

## FEATURES & BENEFITS

- Economical and long lasting
- Excellent protection for new and old surfaces.
- Water, dust and dirt repellent
- Hard coating
- Excellent abrasion resistance
- Easy to clean/self cleaning effect

## SPECIFICATIONS

Supply form	Liquid
Colour	clear
Density	Approx 0.79
Solvents	< Alcohol; denatured
Flashpoint	16°C
Storage temperature	4 to 35 °C / 39 to 86°F
Application temperature	4 to 35 °C / 39 to 86°F

## SURFACE PREPARATION

The substrate must be completely clean and dry before the application.

Proper surface preparation insures maximum performance and durability Surfaces must be dry and free from dirt, grit, dust, grease etc.

Use CL 50 cleaner or a Nanovations approved cleaner.

CL 40 should be used on older contaminated glass.

Contaminations like wax and Silicone must be removed.

Applications on ARC SiO<sub>2</sub> based coatings in controlled environments and factories , can be done direct without further preparation. We recommend contacting our technical department.

Do not touch the cleaned glass with bare hands. Use a contact angle meter test to evaluate surface is free of contaminates prior the coating. Glass must be hydrophilic prior the coating.

## APPLICATION

Ensure the surface is free of any previous residue of the cleaner. DO NOT use the same cloth as used for cleaning. Use a dry soft and clean cotton cloth or polishing towels.

The manual application takes place in a spray and wipes application. Apply a small amount and polish in the wet treatment in a circular overlapping polishing motion, treating section by section. Spray the next area and repeat the process.

Ensure the whole surface gets treated evenly and in a consistent method.

Alternatively, the treatment can be sprayed onto the towel or cloth and polished into the glass in the same manner. Treat only small sections at a time and ensure the whole surface is treated evenly.

Check the treated area for any streaks, residue or product splashes and wipe them off.

The glass should be crystal clear when finished.

Only a small amount of product is required.

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## CURING

**NG 1314/D** is water-resistant 15 - 30 minutes after the application. The optimum repellent effect takes up to 24 hours to appear depending on the temperature of the surface.

The full surface hardness takes several days to appear.

## CONSUMPTION

Consumption is between 2,5 ml and 10 ml a square metre depending on the conditions of the substrates and the age of the glass.

300 - 100 square meter per litre (180 – 540 square foot)

Up to 400 m<sup>2</sup> on new glass. Guidelines only.

Layer thickness < 100 Nm

## TOOLS

IR light source

## PACKAGING

250 ml ,1litre / 20 liter drums.

## STORAGE

NG 1314 can be stored in the original sealed packaging for at least 24 months. Storage conditions should be dry and cool.

Detailed storage and handling and additional information, can be found in the Material Safety Data Sheet.

## PRECAUTIONS

READ ALL SAFETY DIRECTIONS AND WARNINGS ON PACKAGING BEFORE USE. REFER TO MATERIAL SAFETY DATA SHEET FOR HANDLING PROCEDURES.

**NG 1314 - D** contains alcohol. Provide adequate ventilation if applying in a confined area. Spray tools should be cleaned with IPA alcohol.

Please read the MSDS

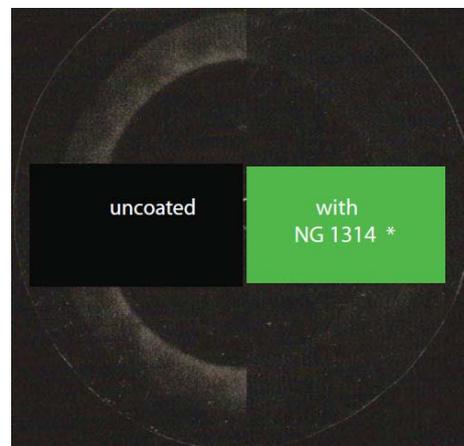
## PRODUCT PERFORMANCE DATA: LIGHT TRANSMISSION



**NG 1314/D** has undergone independent testing with solar panel manufactures to ensure light transmission through the treated glass is not affected. The coating is invisible, treated glass is almost as transparent to the spectrum of the light than completely untreated glass.

## ABRASION RESISTANCE

BS EN ISO 11998 is a method for simulating the ability of coatings to withstand wear caused by repeated cleaning operations or general wear and tear. The coating is able to protect the glass substrate from scratches as seen below.



The information, and, in particular, the recommendations relating to the application and end-use of the products, are given in good faith based on current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

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