NewPro – Neue Produkte & innovative Ideen für Oberflächen und Reinigung
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Technical Data and Analysis

NewPro Nano Duration & Duration-A NC

Outperforming Ceramic Coatings

NewPro Duration & Duration-A NC Ceramic Coatings is the solution to maintain the value of your surface.

KEY FEATURES:

Non Stick:	water and dirt repellence offers long term protection and facilitates cleaning
Graffiti and stain protection:	barrier properties of ultra-dense ceramic and quartz structures protect from dirt and contamination ingress.
Scratch protection:	surfaces are more resistant to wear and tear
Corrosion prevention:	ultra-density halts rust at source
UV protection:	anti-aging preserves valuable surfaces
High temperature resistance:	No change in characteristics under intensive heat (up to 1000 degrees)
The perfect finish:	Color enhancement and gloss bring outstanding aesthetics to surfaces.
Easy to apply:	Perfect finish is achieved without the need for special training

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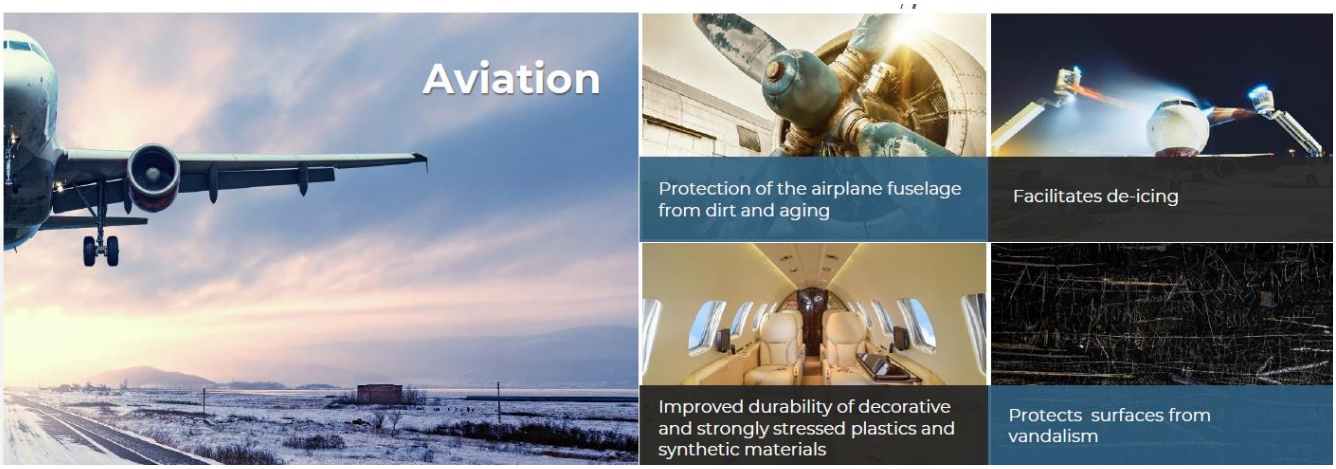
Long term protection in the aviation sector:



Exterior: Up to 10 years **Interior:** Matches durability of the surface

Long term protection for construction and architecture:

- Architecture and building construction (exterior and interior)
- Depending on their location, buildings are heavily exposed to heat, regular rainfall, humidity and snow. Interior surfaces are exposed to wear and tear and dirt.

Exterior: Up to 10 years **Interior:** Matches durability of the surface

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Industry (machinery, construction parts, mechanical equipment)

When companies make significant investments in industrial plant and equipment, they seek efficient and protected performance over the long term. Ceramic coatings **NewPro Duration & NewPro Duration-A NC** provide a robust protection against corrosion, calcification, wear and tear, and dirt.

Moreover, they show very strong chemical stability:

- Easy clean performance in food production (production lines, tanks)
- Non-stick coating for pipelines, reactors used in the chemical industry, machines and utility vehicles
- Easy displacement of bio films

TECHNOLOGY OVERVIEW

Our ceramic coatings are composed of different kinds of precursors organic pre ceramics and anorganic quartz.

- Organic ceramics generate dense ceramic layers with Si-N-Si and Si-O-Si structures. Consequently, coatings are extremely resistant to heat and provide excellent protection against corrosion and weathering. In addition, their strong non-stick properties repel water and dirt. Paints are distorted on hitting the coated surface and are hardly able to bond, thus demotivating graffiti artists. Graffiti removal is easily facilitated.

- Anorganic quartz generates a film composed of silicon dioxide (similar to quartz or glass) and provides many substrates with anti-scratch properties as well as excellent stability to chemicals and heat.

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EFFECTS IN DETAIL:

EASY CLEAN COATINGS FOR PERFECT SURFACES

Make life easier for industrial customers as well as consumers with ceramic coatings. They will save a lot of time and effort when cleaning cars, kitchens, boats and buildings.

Easy To Clean, Easy To Apply

The appearance of even the most well maintained environments can easily be compromised:

- Sweaty hands leave permanent traces on stainless steel sinks
- Mud splashes on cars
- Vandals leave graffiti on trains
- Their cleaning requires a lot of time and aggressive chemicals

Ceramic protection prepares the material for constant cleaning and contributes significantly to reduce contamination, thus saving not only time, but in the long run also reducing material costs.

How Does This Effect Work?

Hydrophobicity is the magic word, it describes the capability of **NewPro Duration & NewPro Duration-A NC** to repel water and to keep surfaces in good condition.

- Cleaning only needs a small amount of water and cleaning liquid no abrasion or aggressive cleaning methods.

- Unwanted graffiti can be removed easily and quickly. Coatings also prevent damage caused by chemicals from paints.

Easy clean coatings such as NewPro Duration & NewPro Duration-A NC are used in the following sectors:

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SCRATCH PROTECTION AGAINST WEAR & TEAR

The slightest damage to a surface is a curse, especially on high gloss surfaces. Our solution for an enhanced scratch resistance provides the automotive, construction and marine industries, and many other sectors with optimum surface protection.

- For scratch resistant surfaces
- With the slightest of accidental movements when getting into a new car, in a second the perfect surface can be damaged by a small scratch by a ring, a handbag or a zip.
- Besides **NewPro Duration, Duration VF, Duration HD & Duration-A NC** provides all interior and exterior surfaces with a particularly enhanced scratch resistance.

Use the products for a scratch resistant finish on surfaces in the following areas:

Transport:
Automotive
Aviation
Public transportation, e. g. trams and trains

Architecture And Building Construction:

- Building facades
- Interior fixtures & fittings, e. g. stainless steel sinks
- Industry
- Production plants

Our solutions are able to be used to protect the following materials

- Metal, e. g. steel
- Aluminium
- Plastics

CORROSION PROTECTION

- Weathering, high air humidity and other tough environmental conditions may damage materials through corrosion and surface rust.
- Even aluminium based material and equipment is at risk of being corroded. Any surface damage will create a negative visual impact.
- For boats, building facades, vehicles or facilities such as wind parks and industrial facilities corrosion may pose a huge problem with regard to maintenance and safety requirements.

Corrosion protection does not only retain the appearance of a surface, but also prevents future surface damage to steel and other metals. Surfaces protected by an effective coating against corrosion repel the damaging elements and retain their quality and appearance.

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Our coating solutions are used across a large number of sectors:

Transport:

- Automotive industry
- Marine
- Aviation
- Public transportation, e. g. trains and tramways

Architecture and building construction

- Building facades
- Decorative interior fittings, e. g. stainless steel sinks
- Industry
- Windparks
- Production plants
- Pipelines

PRODUCT CHARACTERISTICS:

	NewPro Duration - **organic**	NewPro Duration-A - **inorganic**
Polymer	Si-N-H H polymer with organic residues (contains carbon)	Pure Si-N H polymer without carbon
After curing	SiO_2 layer with carbon residues; less carbon residues under high temp baking	Pure SiO_2 layer (glass ceramic)
Cracking Threshold of Resin	30+µm µm layer	< 2 µm µm layer
Electrical insulation	Good (carbon contamination)	Excellent (same as glass ceramic)
Hardness/flexibility	Soft/bendable	Hard/brittle
Chemical Barrier (H_2O, O_2 & other gases)	Good	Excellent

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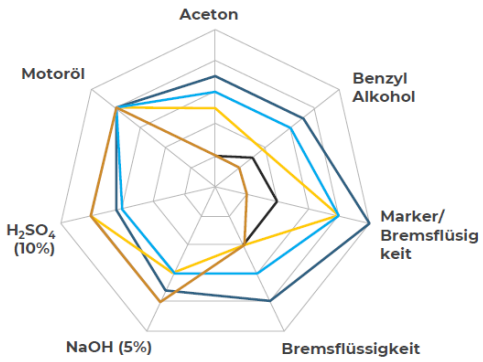
Suitable Surfaces:

Effects	Duration	Duration VF	Duration HD	Duration-A BC	Duration-A
Easy clean / stain repellent	*****	*****	*****	*****	*****
Water repellent	****	****	****	**	***
Graffiti protection	*****	*****	*****	**	*****
Scratch protection	***	***	*****	*****	*****
Hardness	up to 9H	up to 9H	9H	>9H	>9H
Corrosion protection	***	***	****	****	*****
Anti-aging	****	****	****	****	****
Easy to apply	****	*****	****	****	**
Density of cured film	***	***	****	*****	*****
Number of max possible layers (in time lag of)	***(5 min)	***(5 min)	**(5 min)	****(1 h)	**(1 h)
Gloss	*****	***	****	****	***
Durability	****	****	*****	****	*****
Temperature stability (°C)	600	600	800	1000	1000
Car bodywork	*****	*****	*****	*****	*
Plastics	**	*****	***	***	*
Metals	*****	*****	*****	*****	*****
Minerals	*****	*****	*****	*****	*****
Unfinished wood	*****	*****	*****	*****	*****
Lacquered wood	**	*****	**	**	**
Gelcoat	*****	*****	*****	*****	*****
PU	**	*****	**	**	**
Glass	*****	*****	*****	*****	**
Leather	*	***	*	*	*

***** excellent ⟶ * not recommended

CHEMICAL RESISTANCE



5: No Effect – No detectable change in the material surface.
4: Excellent – Slight detectable change in colour or gloss, but no change in function or life of the surface.
3: Good – A clearly discernible change in colour or gloss, but no significant impairment of surface life or function.
2: Fair – Considerable change in appearance due to dis-coloration or etching, possibly resulting in deterioration of function over an extended period of time.
1: Fail – Pitting, cratering or erosion of the surface. Obvious and significant deterioration.

Duration derivates, Duration as additive in lacquer, Alkyd melamine system, 2K Polyurethane system, Silicone

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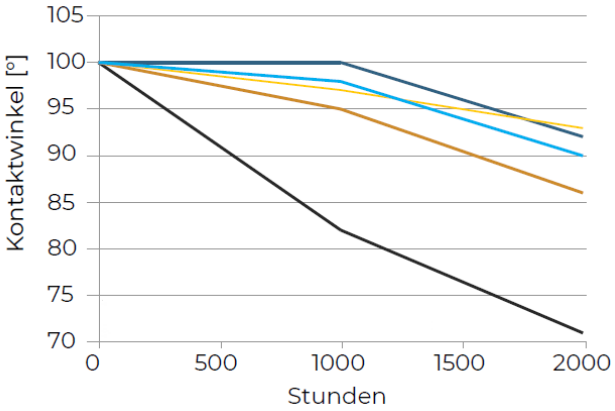
Weathering Resistance of Duration



- DIN EN ISO 11341 paints and varnishes
- Artificial weathering and exposure to artificial radiation
- Exposure to filtered xenon-arc radiation (2000 hours)

Duration derivates, **Duration as additive in lacquer**, **Alkyd melamine system**, **2K Polyurethane system**, **Silicone**

APPLICATION:

PRODUCT APPLICATION AND TOOLS

All product versions are supplied ready to use. Depending on the substrate they can be applied with microfiber applicators or paint rollers (microfiber flocking). The product is also suitable for spray application.

Spray Application

Process:	HVLP compressed air
Working pressure:	approx. 2-3 bar
Nozzles:	0.8 - 1.3 mm
	The spray gun can be cleaned with for example n Butyl acetate
Shelf life:	12 months from delivery date, at 20°C

CONDITION OF SUBSTRATE

The substrate to be coated must be clean, grease free and completely dry. Areas which are difficult to reach, such as cavities or drainage channels etc should be dried with absorbent cloths or blown dry with compressed air. On contact with a damp substrate surface, ceramic coatings react prematurely and cannot form a permanent bond. The substrate temperature must be between +5 °C and +30 °C, the relative humidity at 30%- 80%.

NewPro Duration, Duration VF, Duration HD: full curing at room temperature in 5 - 7 days

The recommended curing conditions (until water resistant) are:

- Room temperature: 8 - 12 hours
- 80 °C: two hours
- 130°C - 180°C: one hour

NewPro Duration-A und Duration-A BC: full curing at room temperature in 24 hours

The recommended curing conditions (until water resistant) are:

- Room temperature: 6 hours
- 80°C: 1 hour
- 130°C - 180°C: 30 min

SAFETY AND STORAGE

SAFETY

- Safety instructions are detailed on the material safety data sheet and should be followed unconditionally.

- Wear solvent resistant gloves (e.g. butyl or nitrile rubber gloves) when applying the product.
- Wear suitable eye protection (safety glasses or face mask).
- Provide adequate ventilation of working area.
- Wearing a half mask with filter types A2 B2 E2 K2 Hg/P3 when applying the product is recommended.
- The solution must not be mixed or diluted with other solvents.
- Store in a cool dry place with adequate ventilation (10 °C).
- Open the container periodically to release overpressure (ammonia, hydrogen).
- Keep away from fire, sparks, water, moisture, alcohols and other chemical substances.

STORAGE

Ceramic coatings should be stored in a cool (10°C), dry place with sufficient ventilation. Ventilate sealed containers regularly (once per month) to release pressure. Ventilation dates should be verifiable. This activity will minimize the accumulation of ammonia, hydrogen and self-igniting silane gas.

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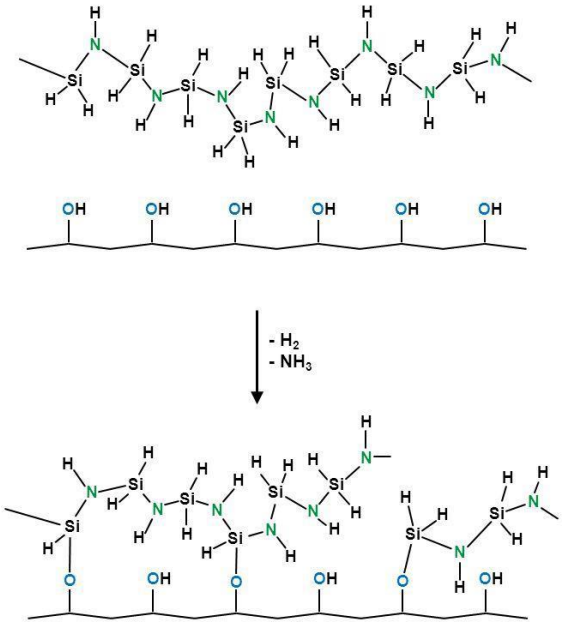
Avoid Scam and Fraud! -
characteristics of 9H ceramic coatings



1. Ammonium hydroxide smell Polysilazanes can only be manufactured using it
2. Sensitivity to humidity they react with air humidity to create a chemical bond
3. Sold in pressure resistant aluminium or glass bottles they can resist pressure in the bottle
4. No ethanol solvent odour! This is from silane or polysiloxane technology with only a fraction of durability and protection