



Nu-Klad 100A

Spray-On Epoxy Surfacer

Product Data/ Application Instructions

- **A monolithic epoxy surfacer, applied by spray**
- **Eliminates trowelling, reduces labour costs**
- **Resists a wide range of acids, alkalis, and solvents**
- **Dense film composition withstands abrasion and heavy traffic**
- **100% volume solids, contains no VOC**

Typical Uses

Nu-Klad 100A is used for the protection of concrete floors, walls, and overhead surfaces in chemical processing, power, sewage and waste treatment plants, pulp and paper, textile and steel mills, mining and metal finishing operations.

Outstanding Characteristics

Nu-Klad 100A is resistant to splash and spillage of a wide range of acids, alkalis, and solvents at continuous operating temperatures up to 60°C/140°F. Nu-Klad 100A should only be used within the chemical resistance and temperature limitations recommended. Refer to Nu-Klad Chemical Resistance Chart for suitability in specific chemical services.

Approvals and Certificates

Nu-Klad 100A complies with ANSI/ASTM C-722, 'Standard Specification for Chemical Resistant Resin Monolithic Surfacing'.

Nu-Klad 100A is authorised by USDA for use in federally inspected meat and poultry plants.

Physical Data

Finish	smooth to non skid
Colour	grey *
Components	3
Mixing ratio (by weight)	
resin	3.30 kg
cure	1.70 kg
powder	15.00 kg
Curing mechanism	chemical reaction between components
Volume solids	100%
VOC**	
EC SED 1999/13/EC	2 g/kg (3 g/l)
Recommended thickness for splash & spillage with:	
moderate physical abuse	3 mm
heavy physical abuse	5 mm
Number of coats	1
Calculated coverage per unit.....	2.08 m ² at 5 mm
Allow for application losses, surface irregularities, etc.	
Specific gravity	1.96 kg (mixed product)
Flash points	
(Closed Cup).....	°C °F
resin	100 212
cure	100 212
Amercoat 171	24 75
Amercoat 175	not applicable

TYPICAL PROPERTIES:

Bond strength to 3000 psi concrete (ASTM C321)	> 2 N/mm ² (concrete failure)
Tensile strength (ASTM C307) .	> 20 N/mm ²
Shrinkage (ASTM C531)	0.12%
Compressive strength (ASTM C579)	79.3 N/mm ²
Flexural strength (ASTM C580)	37.7 N/mm ²
Modulus of elasticity (ASTM C580)	ca. 6600 N/mm ²

Absorption (ASTM C412)

< 0.15%

* Surface discolouration occurs on exposure to sunlight or certain chemical agents. However, product performance is not affected.

** VOC figures are quoted according to both the EC directive 1999/13/EC which are theoretically calculated figures and the UK PG6/23(92) Appendix 3 which are practically determined figures.

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Surface Preparation

Nu-Klad 100A spray-on epoxy surfacer is applied over concrete surfaces primed with Amerlock Sealer. Concrete must have cured a minimum of 14 days and attained 80% of its final physical properties. On formed surfaces (verticals and overheads), prefilling of all voids >3 mm with Nu-Klad 114A epoxy filler is required to prevent possible voids in the finished Nu-Klad 100A. Refer to Nu-Klad 105 and Nu-Klad 114A product data sheets and application instructions for proper application and curing procedures. Primed or filled concrete surfaces must be clean, free of moisture and contaminants such as dust, dirt, grease or oil. Remove contaminants using a solution of trisodium phosphate (approx. 50 g/l) followed by a clean water rinse. If necessary, repeat to completely remove all contaminants.

Nu-Klad 100A is normally applied over Nu-Klad 114A which has cured overnight at 23°C/73°F. Nu-Klad 114A which has cured beyond three days outdoors, or six months indoors, must be roughened by abrasive blasting. Remove all loose material. Nu-Klad 100A is normally applied over Amerlock Sealer which has cured to a tack free condition (16 hours at 23°C/73°F). On slabs, application over wet (tacky) Nu-Klad 105 is suitable. Nu-Klad 100A can be applied over Amerlock Sealer which has aged up to one year (indoors or outdoors). Surface must be clean and dry. Surfaces aged beyond one year must be roughened by abrasive blasting. Remove all loose material.

NOTE: In case Nu-Klad 100A is to be applied to a steel substrate, abrasive blasting to Sa 2½ (Swedish Standard SIS 05-5900-1967) or in accordance with Steel Structures Painting Council Specification SSPC-SP-10 "Near White" as a minimum is necessary. Blast to achieve an average 75 µm profile as determined with a Keane-Tator Surface profile comparator or similar device.

Expansion/Contraction joints

Where expansion joints, construction joints or control joints are incorporated in the concrete, an elastomeric joint must be incorporated through the surfacer. A temporary spacer, such as a waxed board, should be placed over these locations during the application of Nu-Klad 100A. The spacer is later removed and the area filled with a suitable epoxy or two component polysulphide expansion joint compound like flexjoint from Henkel (www.flexjoint.com).

Mixing

Always use mechanical mixing equipment when preparing Nu-Klad 100A. The rapid shearing action of a mechanical mixer enhances the workability of the material. A 'mortar' type mixer is the preferred mixing equipment. Stir resin and cure separately and then mix both components thoroughly.

Pour the mixed liquid into a large clean can and gradually add the powder component. Do not reverse order. Do not vary proportions. Continue power mixing until a smooth, uniform consistency is achieved. Mixing may also be done by using a ½" slow speed drill with a 'Jiffy Mud & Resin Mixer' (as supplied by Goldblatt).

Nu-Klad 100A is supplied in 20 kg units as follows: 15.00 kg powder in 20 l drums, 3.30 kg resin in 5 l cans and 1.70 kg cure in 2½ l cans. All components must be at least 18°C/64°F before mixing. Mix only full units. Make no additions or deletions. Any deviations will inhibit curing and alter final physical properties. Nu-Klad 100A is ready for use immediately after mixing; no induction time is required. Do not mix more material than can be used within the working time (2½ hours at 20°C/68°F). Material which has begun to set is unsatisfactory and must be discarded. Because Nu-Klad 100A cures by chemical reaction and not by release of solvents, it will set completely in confined areas.

Application Data

Substrate concrete primed with Amerlock Sealer

Application Equipment

The following spray application equipment is recommended for application of Nu-Klad 100A, but other equipment which can achieve a proper application may be used: Quickspray Carrousel Pump with spray gun and material lines, Model No. 10-2414-112-000, furnished by Quickspray Inc. Port Clinton, Ohio.y

Potlife 2½ hours (ASTM C-308) at 20°C/68°F

Initial setting time 10 hours (ASTM C-308) at 20°C/68°F

		°C	°F
Ready for service	3 days at	23	73
	5 days at	18	64
	7 days at	16	61
	10 days at	13	55
	14 days at	10	50

Potlife and drying times are dependent on temperature and quantities mixed.

Induction time not applicable

Environmental Conditions

Material temperature..... 18-27°C 64-81°F

Surface temperature..... 18-27°C 64-81°F

For proper workability, store Nu-Klad 100A between 18-27°C (64-81°F) for 48 hours prior to use. Handling of material that is below 18°C/64°F becomes difficult and could cause a breakdown in the spray equipment.

Above 27°C/81°F, the working time decreases. Nu-Klad 100A can be applied to surfaces with temperatures as low as 10°C/50°F; although curing is retarded, typical properties of the cured Nu-Klad 100A will not be affected. Also the finished texture may be a more pronounced non skid. Nu-Klad 100A can be applied to surfaces

Starter liquid Amercoat 171

Cleaner Amercoat 175

Nu-Klad 100A

Equipment Clean-up

Immediately after use, clean all application tools and spray nozzle by the following procedure:

1. Stir Amercoat 175 cleaner to uniform.
2. Empty Nu-Klad 100A from the hopper. Clean the spray equipment by pouring a unit of Amercoat 175 cleaner into hopper and run through until Nu-Klad 100A is removed from the material line.
3. Empty the hopper from the Amercoat 175 cleaner and follow with a clean water rinse. Use sponge 'pigs' during this water cleaning procedure, to remove any remaining loose deposits from the side walls.

Repair

1. Check film thickness and quality of Nu-Klad 100A continuously during application. Corrections or irregularities of applied cladding thickness can easily be made, while the Nu-Klad 100A is still soft.
 - 1.1. Low thickness areas: spray on additional coat to obtain specified thickness.
 - 1.2. Holidays or damage down to substrate: scrape the Nu-Klad 100A from that area and reapply Nu-Klad 100A.
 - 1.3. Rough or porous appearing areas: correct with a short hair roller, which is wetted with Thinner 21-06.
2. For the repair of cured Nu-Klad 100A following procedures are recommended.
 - 2.1. Low thickness areas: sweep blast and apply Nu-Klad 100A to specified thickness.
 - 2.2. Holidays or damage down to substrate: blast in accordance with instructions under Surface Preparation and roughen overlap area. Reapply Nu-Klad 100A.
 - 2.3. Rough or porous appearing areas: remove porous or rough Nu-Klad 100A by grinding or blasting and reapply Nu-Klad 100A in accordance with instructions above.

Application Procedure

1. Lubricate internal of material line, pumping line and pole gun of carousel pump by pumping Amercoat 171 starter liquid through spray equipment before starting application of Nu-Klad 100A. Pour stirred Amercoat 171 starter liquid into the hopper. Remove nozzle cap and close air atomization valve from the spray gun. Start carousel pump slowly and circulate the Amercoat 171 starter liquid for at least 5 minutes through the pump.
2. Empty the hopper completely by pumping the Amercoat 171 starter liquid back into the starter liquid container. Pour one unit of Nu-Klad 100A into the hopper and adjust speed of the squeezing rollers to approx 3 rpm by regulating air motor. A small amount of air must always be bleeding through the spray gun air tip to keep material from backing up in the air tip.
3. Continue pumping until the uniform grey colour of the Nu-Klad 100A appears. Install the nozzle cap. Slowly open the air atomization valve until a correct spray pattern is obtained. The spray pattern is also controlled by adjustment of the air stream plunger.
4. Apply the Nu-Klad 100A by moving the spray gun with rotating passes on the surface until specified thickness is achieved. Keep the spray gun at sufficient distance from the substrate to avoid, that the mechanical force of the spray disturbs the already applied Nu-Klad 100A or creates drops and deformation of the applied material.
5. Check coated areas for defects ½ to 2 hours after application, depending on temperatures. Imperfections can be corrected with a short hair roller, which is wetted with Thinner 21-06.
6. Make periodic checks during the application for specified thickness using a steel rule depth gauge or other suitable wet

film thickness gauge. Theoretical coverage at 3 mm is 4.3 m² per unit; at 5 mm 2.6 m² per unit.

7. Nu-Klad 100A is cured to initial setting after 10 hours at 20°C/68°F. Nu-Klad 100A is ready for handling after 16 hours at 20°C/68°F. Nu-Klad 100A is cured and ready for service as follows:

(°C/°F)	20/68	18/64	16/61	13/55	10/50
days	3	5	7	10	14
8. Nu-Klad 100A may receive water contact right after application; however, the wet coating should be protected from washing action which could remove the film while it is still soft.

Shipping Data

Packaging	
resin	3.30 kg in 5 l container
cure	1.70 kg in 2½ l drum
powder	15.00 kg in 20 l can

Shipping weight	
unit	approx. 22.4 kg

Shelf life	1 year from shipment date when stored indoors in unopened, original containers at 5 to 40°C (41 to 104°F).
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Caution

Nu-Klad 100A resin and cure are combustible and may cause skin and eye irritation. Amercoat 171 starter liquid is flammable. Keep away from heat and open flames. Keep container closed. Use with adequate ventilation. Avoid prolonged breathing of vapor. If used in confined areas, circulate adequate fresh air continuously during application. Avoid contact with skin or eyes. Do not take internally. In case of contact, immediately flush skin with plenty of water; for eyes, flush with plenty of water for at least 15 minutes and get medical attention. Amercoat 175 Cleaner is a mild irritant. Do not take internally. Avoid prolonged and repeated contact with skin. Avoid contact with eyes. In case of contact with eyes, flush with plenty of water for 15 minutes and get medical attention.

Safety

Since improper use and handling can be hazardous to health and cause of fire or explosion, safety precautions included with Product Data/Application Instruction and Material Safety Data Sheet must be observed during all storage, handling, use and drying periods.

Warranty

PPG warrants its products to be free from defects in material and workmanship. PPG's sole obligations and Buyer's exclusive remedy in connection with the products shall be limited, at PPG's option, to either replacement of products not conforming this warranty or credit to Buyer's account in the invoiced amount of the non-conforming products. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

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