

Abrasion-resistant Dual-Cure Protective Lacquer for Aluminum



Norilux® DCAL is a formable, abrasion resistant dual-cure screen printing lacquer, which can be used as a first surface protective lacquer/hard coat on aluminum and other metals.

The ink systems NoriScreen® ALU and NoriPUR® can be overprinted with Norilux® DCAL as a protective lacquer.

Cured lacquer layers of Norilux® DCAL are resistant to chemicals and pass various “creme tests” of the automobile industry. Norilux® DCAL is ideally suited for first surface coating for 2D and 3D applications.



Potential applications are automotive trims, door sills as well as metal faceplates for household appliances.

Characteristics:

Norilux® DCAL

- ✦ can be used for overprinting silicone free UV, solvent and water-based screen printing inks (pre-tests required)
- ✦ -is formable, e.g. by high pressure forming or thermo forming
- ✦ -shows excellent abrasion resistance
- ✦ -shows excellent resistance to chemicals
- ✦ -is available in a high gloss and a matt version
- ✦ -further gloss levels and tinted versions are available upon request
- ✦ -effect lacquers (e. g. sparkling effect) are available upon request





Printing Sequences and processing options:

- 1) "Pre-print": Printing one layer as a primer, for example NoriScreen® ALU or NoriPUR®, and subsequent overprinting of the dried primer layer with Norilux® DCAL. When overprinting ink layers, Norilux® DCAL has to be processed with Hardener 036.
- 2) "Direct print": The protective lacquer is printed directly onto the metal substrate (without a primer). Adding 10 % adhesion promoter NoriCure® HV-M to the homogenized Norilux® DCAL/ Hardener 036 mixture is necessary.

The dual cure system Norilux® DCAL dries by evaporation of the solvents in jet dryers.

Before UV curing, printed Norilux® DCAL layers must not be stacked. Therefore, the uncured sheets should be stored separately in a rack after jet drying.

Before further processing (forming, trimming), the printed substrates must be dried at 80 °C to 100 °C (176 °F to 212 °F) for 30 minutes. Minimizing

solvent residues is necessary for dual cure lacquer Norilux® DCAL to achieve its outstanding properties.

Forming process:

The decorated metal substrates can be further processed by high pressure forming or thermo forming. For deeper forming geometries, thicker lacquer layers are required. Those layers can be achieved by using coarser fabrics such as 90-40 threads/cm (230-40 threads/inch).

UV curing:

Norilux® DCAL is UV cured using a high-output mercury bulb.

Depending on the thickness of the lacquer layer, a UV dose of at least 2 000 mJ/cm²

(13 000 mJ/sq inch) is necessary (Kühnast UV-Integrator, UV 250 to 410 nm, max. 365 nm).

The higher the UV dose, the better the abrasion and chemical resistance.

After UV curing, the cured substrates can be further processed by die cutting, trimming, or mounting.

