TECHNICAL INFORMATION

LIMBOROUTE 2-C K809

Information for Indoor Use

swarco

Road Marking Systems

Road Marking Systems

LIMBOROUTE 2-C K809

Art.-No.: 14809A, white airless technique
Art.-No.: 211….RAL…., colored

Version: 2022-03-17

Important Information:
Please consider our General Terms and Conditions and the general notes of the Technical Information Sheet! No liability is accepted for any errors! The information is provided to our best knowledge and experience. This information is, however, no warranty for any properties of the material. We provide this information without obligation, also regarding the rights of third parties. The user has to make sure that the material is appropriate for the respective application.

1 Main characteristics / Fields of application

LIMBOROUTE 2-C K809…

- is a high quality, low-solvent, aromatic-free 2-component high solid paint based on modified epoxy and polyaminoamide hardeners
- is suitable for indoors and outdoors for bituminous surfaces (mastic asphalt, asphalt concrete), concrete and cement-bound surfaces. Suitable for floor coatings, at car parks, warehouses and industrial buildings
- suitable for application onto humid surfaces (e. g. fresh concrete and/or residual humidity > 4%)
- distinguishes itself from conventional one-component paints by its chemical reaction resulting in extended durability, resistance against chemicals and abrasion. Chemical reaction occurs besides physical drying through the evaporation of the solvent
- LIMBOROUTE 2-C K809 in combination with 2-comp. UV-clear varnish improves dirt pick-up properties and results in enhanced durability
- has been tested by the Institute of Paints and Varnish (ILF, Magdeburg) for its chemical resistance against various aggressive substances in line with DIN 68861, part 1 (test report available)
- available for air spray and airless application

2 Technical Data

Color	White, (other colors upon request)
Density	approx. 1.49 kg/l +/- 0.04 kg/l (with hardener)
Mixing ratio	base component LIMBOROUTE 2-C K809 : hardener (8623) = 20 : 1
Curing time	Laboratory values may differ from field conditions depending on climate (temperature, humidity, wind) material, layer thickness and road surface. In general, the marking's trafficability must be checked before exposing it to traffic. We recommend 12 hours waiting time (assuming 20 C° surface and air temperature).
Potlife	max. 3 days
Solid content	min. 75%
GIS-Code	RE3
Solvent content	max. 25%
Thinner	If required add max. 2% Thinner for 2-C EP, Art.-No.: 3130 for viscosity adjustment and for cleaning of machine and tools
Storage stability	6 months (unmixed), in sealed original packaging; protect from frost and direct sun light
Identification	The regulations and instructions concerning appropriate transport, handling, storage, first aid measures, toxicology and ecology are stated in our material safety data sheets! The instructions stated on the product label and in the MSDS must be followed.
Standard packaging	**2-C K809:** tin container of 35 kg filling weight **Hardener 8623:** cans of 1.75 kg filling weight (corresponds with mixing ratio) **Drop-on m**aterial: paper bags with PE-inlay – 25 kg filling weight
Drop-on material	Usually there is no drop-on material applied for indoor and car park applications because of their tendency to attract dirt. Should skid resistance be a particular issue, 0.25 kg/m² of pure skid resistance particles (e. g. cristobalite sand M72, Art.-No.: RH11130) can be dropped onto the wet film. In general, there are no requirements regarding retro reflection.
Processing temperature	min. +5°C
Surface temperature	+5°C to +45°C
Rel. humidity	max. 75% (dew point spreadsheet has to be regarded)
Layer thickness / Theoretical consumption	Wet film thickness = Dry film thickness = Theoretical consumption 300 µm = 160 µm = 0.45 kg/m² (0.3 l/m²) 400 µm = 214 µm = 0.59 kg/m² (0.4 l/m²) 600 µm = 321 µm = 0.89 kg/m² (0.6 l/m²)

	The actual consumption depends on the applied layer thickness and the type and state of the surface

3 Processing instructions

3.1 Preparation of material and application technique

Before processing LIMBOROUTE 2-C K809 must be homogenously stirred in its original container. Then the hardener (Art.-No.: 8623) must be added und stirred uniformly into the base component at the stated mixing ratio (20 : 1). The exact machine adjustments depend on application conditions, type of machine, requested wet film thickness and need to be made according to the machine manufacturer's instructions.

The theoretical consumption of the paint is listed in the table "Theoretical consumption of material and drop-on materials" on our homepage (in kg/m²).

The cleaning of machine (paint tank and hoses) and tools must take place before the curing is finished, with Thinner for 2-C EP (Art.-No.: 3130) exclusively. Avoid intermixing with other thinners or marking materials.

Before longer marking interruptions remove any paint mixed with hardener.

3.2 Optimizing of application properties

The paint is ready for processing upon delivery. In general, it is not necessary to add thinner but for optimizing the material's spray properties add max. 2% Thinner for 2-comp. EP (Art.-No.: 3130). Remaining LIMBOROUTE 2-C K809 (from the day before) must be applied completely before new paint is filled into the machine's paint tank. Use thinner recommended by the manufacturer only.

4 Surfaces / pretreatment

4.1 General information

The surface must be dry, clean, free from grease, oil and loose gravel and other contaminations. The surface and potentially existing old markings must be checked for their carrying capacity and compatibility with the material to be applied. In case of doubt, test applications and adhesion tests are required. Ideally, old markings should be removed with appropriate mechanical procedures.

Attention: LIMBOROUTE 2-C K809 is not suitable for large scale asphalt markings.

The effects of moisture (rain, dew, fog, etc.) on the freshly applied LIMBOROUTE 2-C K809 can lead to the so-called carbamate formation on its surface (whitish surface, white streaks or spots). This is particularly noticeable with coloured and dark shades. See also General notes on Technical Information "Carbamate formation".

4.2 Concrete and cement-bound surfaces

The pavement components that prevent good bonding, especially on new concrete, including fine mortar layers, concrete slurries, concrete after-treatments as setting retarders, paraffin, impregnations on silicate basis etc. must be appropriately removed (e. g. with high pressure waterjet, fine millcut or similar). We recommend conducting test applications (bonding tests after 3 days waiting time), in case of doubt communicate concerns in written form.

When applying the paint to concrete or cement-bound surfaces, the formation of bubbles is likely to occur. In order to prevent bubble formation the concrete should be pretreated with LIMBOROUTE 2-C K809 blended 1 : 1 with Thinner for 2-C EP (Art.-No.: 3130), with a wet film thickness of approx. 200µm. Once dried, a second, undiluted layer can be applied.

4.3 Bituminous surfaces

Any loose components such as chippings must be removed. On new asphalt surfaces additives (flux oils, adherents etc.) are detrimental to good bonding of markings and can cause discolorations on marking paints. Before application test markings / bounding checks are necessary. Since a mechanical removal is hardly possible, the surface should be exposed to traffic for 4 – 6 weeks. A bonding check (after 3 days waiting time) is required before applying the final marking.

If marking test results are negative (conduct tests 3 days after application) we recommend: apply LIMBOROUTE 2-C K809 without any guarantee. Bituminous layers at car parks or factories are less compact than compared to road asphalt. Hence marking materials may cause crack formation on such asphalt layers.

4.4 Cobbled pavement

Natural, artificial and compound stone pavements are non-static surfaces. They are not suitable surfaces for LIMBOROUTE 2-C K809. No guarantee is given in cases of: crack formation, chippings caused by the movement of pavement parts, poor marking bonding (e. g. natural or artificial stones), penetration of moisture, wear of marking.

4.5 Floor coatings

Synthetic resin floor products usually consist of epoxy resins or polyurethane. They are differentiated into sanded and non-sanded coatings. Such coatings must be considered as critical surfaces. If the synthetic resin coatings are older than 3 days, it is essential for a successful application of LIMBOROUTE 2-C K809 that the floor is roughened with adequate means (e. g. blastrac, fine millcut or grinding). If the marking is applied within 2 days after the coating application, roughening is not necessary. Due to the variety of different coatings we recommend to conduct test applications and bonding checks and to check the coating's Technical Information, since the data sheets often provide valuable hints.

5 Application technique

With conventional marking machines (airless or atomizing / airspray technique), manually with brush or roller. For airless machines use airless quality only.

Attention: When applying with brush, roller or spray gun (e. g. jobs with stencils) consider the paint's fast drying time.

LIMBOROUTE 2-C K809 must be homogeneously stirred in its original container. Then the liquid hardener is mixed with the base component at the indicated mixing ratio using an appropriate stirring device. Never prepare more material with hardener than is needed for the application (observe pot life).
The exact machine adjustments depend on the application conditions, type of machine, requested wet film thickness and need to be made according to the machine manufacturer's instructions.

When the applied LIMBOROUTE 2-C K809 (matt surface) has dried, apply a second layer of approx. 0.1 mm 2-C UV-clear varnish in order to improve the abrasion resistance and dirt-repellent characteristics and to get a highly glossy surface.

Attention: Machine-applied markings in car parks or factory facilities might not allow marking near walls for technical reasons. It is recommended to resolve whether the costly manual completion of the striping is required. The uniform spread of marking material over the entire application surface must be observed.