TECHNICAL INFORMATION

LIMBOROUTE K829 Y1/Y2

swarco

Road Marking Systems

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LIMBOROUTE K829 Y1/Y2

Art. No. 26829Y1/Y2

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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 K829 Y1/Y2…

- is a high quality, low solvent, aromatic free, one-component high solid paint based on special acrylic binders
- the thin-layered marking paint, tried and tested, with excellent technical properties and very good drying properties when used with thicker wet film layers
- has been tested on the turntable simulator of the German Road Institute (BASt), is approved as Type II marking and is an economic alternative to other temporary construction zone markings
- has been tested at the Institute for Paints and Varnish (ILF) for compliance with Y1 / Y2 chromaticity range in line with DIN 1436 and TL-temporary markings 97
- is suitable for both bituminous surfaces and concrete and cement-bound surfaces
- not suitable for indoor markings and floor coatings; not suitable for large scale markings
- is applicable with all common marking machines
- is delivered in airless quality only

2 Technical Details

Color	Yellow Y1/Y2 (for construction zones)
Density	approx. 1.48 kg/l +/- 0.1
Solid content	min. 75%
Volume solid content	approx. 59.13%
Solvent content	max. 25%
Thinner	When needed add 2% Thinner for HS-paints Art. No.: 3080 (for viscosity adjustment) or add 2% Thinner for high temperature, Art. No.: 3160 (improved bead embedment). For cleaning of machines and tools use Special cleaner for marking machines Art. No.: 3086
Storage stability	1 year in unmixed, sealed original packaging and protected from frost and direct sun light
Drying time / Trafficability	The drying time stated in the BASt test report are laboratory values that 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 impact.
Standard packaging	tin containers of 6 / 15 / 40 kg filling weight containers on request Drop-on material**:** paper bags with PE-inlay; 25 kg filling weight
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.
Processing temperature	min. +5°C
Surface temperature	+ 5°C to + 45°C
Relative humidity	max. 75 % (the dew point spreadsheet has to be regarded)
Layer thickness / Theoretical consumption	Wet film thickness = Dry film thickness = Theoretical consumption 300 µm = 177 µm = approx. 0.44 kg/m² (0.3 l/m²) 400 µm = 236 µm = approx. 0.59 kg/m² (0.4 l/m²) 600 µm = 355 µm = approx. 0.88 kg/m² (0.6 l/m²)

3 Processing instructions

3.1 Preparation of material and application technique

Before processing LIMBOROUTE K829 Y1/Y2 must be homogenously stirred in its original container. The exact machine adjustments depend on application conditions, type of machine, requested wet film thickness, type and quantity of drop-on material and need to be made according to the machine manufacturer's instructions.
The uniform distribution of marking material and drop-on material over the entire application surface must be observed. Losses of drop-on material on both marking edges must be regarded when adjusting bead pistol or bead dispenser.
Theoretical consumption of paint and drop-on material is listed in the BASt test report and in the table "Theoretical consumption of material and drop-on materials" on our website in kg/m².
The Cleaning of machines (paint tank, and hoses) and tools with Thinner for HS-Paints (Art.-No.: 3080) or Special cleaner for marking machines (Art.-No.: 3086) must be conducted before the curing is complete.

3.2 Optimizing application properties

The paint LIMBOROUTE K829 Y1/Y2 is ready for processing upon delivery. In general, it is not necessary to add thinner but for optimizing the material's spray properties approx. 2% Thinner for high solid paints (Art. No.: 3080) can be added. When processing LIMBOROUTE K829 Y1/Y2 at temperatures exceeding 25°C it is recommended to add approx. 2 % Thinner for high temperatures (Art.-No.: 3160). Only thinner recommended by the manufacturer must be used.

4 Surfaces / pretreatments

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. Before applying new bituminous or concrete surfaces it must be checked whether LIMBOROUTE K829 Y1/Y2 paint is the best solution. Otherwise a more easily removable marking system should be used.

Attention: LIMBOROUTE K829 Y1/Y2 is not suitable for large scale asphalt markings (bicycle lanes, sports fields, children's playgrounds)

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 mill-cut or similar). We recommend conducting test applications. In case of doubt communicate your concerns in written form.
On newly washed concrete surfaces (with grit) poor bonding properties may occur, not caused by marking paint quality. Therefore, we recommend applying test markings.

When applying the paint to concrete or cement-bound surfaces, the formation of bubbles is likely. In order to prevent bubble formation the concrete should be pretreated with LIMBOROUTE K829 Y1/Y2 blended 1 : 1 with Thinner for HS-Paints (Art. No.: 3080) and sprayed with approx. 200µm wet film thickness.
Once dried, a second, undiluted layer can be applied. The humidity of the concrete must not exceed 4% during the application of the marking.

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. Prior to the application test markings / bounding checks are necessary (compare point 4.1).

4.4 Cobbled pavement

Natural, artificial and compound stone pavements are non-static surfaces. Basically they are no suitable surfaces for the application of LIMBOROUTE K829 Y1/Y2. No guarantee is given in case of crack formation, chippings caused by the movement of pavement parts, poor marking bonding (e.g. on natural or artificial stones), penetration of moisture, wear of marking. It is assumed that marking bonding is sufficient. In case of doubt, test markings / bounding checks are necessary.

4.5 Floor coatings

For markings on floor coatings our indoor marking products should be used.
LIMBOROUTE K829 Y1/Y2 is not suitable for indoor markings and floor coatings.

5 Application techniques

With conventional marking machines (airless or atomizing technique), manually with brush or roller. Attention: when applying with brush, roller or spray gun (e.g. jobs with stencils) consider the paint's fast drying time.
An immediate broadcasting of the drop-on materials is absolutely necessary. Otherwise the drop-on material will not be embedded properly, which leads to poor traffic technological properties. Two layer applications are an option (first layer + drop-on materials, second layer + drop-on material). Well embedded drop-on beads from the first layer become visible when the second layer is worn.

6 Test reports

6.1 Table: BASt test report

Test report – No.	Thick-ness	Consumption		Drop-on material (DOM)	Traffic technological properties	
	mm	Material	DOM	Identification (divergent identification possible - see relevant test report)	New condition	Used condition
		kg/m²	kg/m²			
Type I Marking						
2018 1VS 05.07	0.4	0.592	0.40	Swarcolux P21 T14 GGK30 yellow	P5, S1, R4, Q3, T3, Y2	P5, S2, R4, Q3
Type II Marking						
2005 1VS 05.12	0.6	0.888	0.60	Swarco, Megalux 0.6-1.5 KT14	P6, S2, R4, RW6, Q3, T2	P6, S1, R4, RW5, Q3, Y2
2018 1VS 05.05	0.6	0.888	0.60	Swarcolux 50 S+10 425 – 1400 T14 GGK30 yellow	P6, S1, R5, RW6, Q3, T3, Y2	P6, S1, R5, RW6, Q3