TECHNICAL INFORMATION

Cold plastic D485
for area markings and anti-skid coatings

swarco
Road Marking Systems

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Cold plastic D485
for area markings and anti-skid coatings

Art.-No.: 52503020 traffic red
Art.-No.: 5250…RAL…., coloured

Version: 2023-02-06

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 applications

Cold plastic D485 for area markings and anti-skid coatings...

- belongs to the group of solvent-free, multi-component, reactive systems
- consists of two or more components which – through chemical interaction – form a duroplastic compound and cannot be thermally plastified thereafter
- is formulated for particular elasticy and especially suitable for large surface coatings (e. g. roundabouts)
- is particularly suitable for use as durable bicycle lane coating at intersections with constant traffic impact
- is appropriate for coloured markings of lane edges, bus lanes, etc.
- can be used as coating for intersections to reinforce the brake effect
- is characterized by excellent skid resistance due to the drop-on of bauxite 1-1,5 mm and is therefore particularly suited as anti-skid coating for roads with heavy traffic impact
- can be dropped on with e. g. transparent glass granulates
- concrete) and concrete surfaces (priming required)
- is applied manually in 4 steps (see chapter 6)
- can be adjusted to different skid resistance values by adding corresponding drop-on aggregates and sizes
- can also be used as single-layer system

2 Technical Data

Colour	traffic red, approx. RAL 3020, (other colours on request)
Density	approx. 1.57 kg/l +/- 0.06
Pot life	10 – 15 min. (depending on hardener quantity added and air, material and surface temperatures)
Solvent content	Solvent-free, don`t add when applying
Solvent for cleaning	Special cleaner for marking machines (Art.-No.: 3086)
Storage stability	6 months; (unmixed) in sealed original packaging and sheltered from frost and direct sun exposure!
Trafficability / curing time	The curing times depend on climate (temperature, humidity, wind), material, layer thickness and road surface. In general, the markings' trafficability must be checked before exposing them to traffic impact.
Standard packaging	**D485:** Tin foil containers of 10/15/25 kg filling weight. **Hardener powder (BPO):** PE bags – filling weight corresponds to mixing ratio and container content. **Attention:** all hardener types are organic peroxides – they must be packaged separately, transported, and stored away from the coldplastic in special containers (special cartons and boxes). **Anti-skid material:** paper bags with PE-inlay – 25 kg filling weight **Condenser:** can of 5/10/25 kg filling weight
Identification	The regulations and instructions concerning appropriate transport, handling, storage, first aid and measures, toxicology and ecology are stated in detail 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% (dew point spreadsheet has to be regarded)
Dry layer thickness	approx. 3.5 – 4.5 mm depending on the type of skid resistance particles (Since the application is done manually with scraper / rubber wiper / roll and as the skid resistance particles differ in size, no exact values can be given for the different layer thicknesses (base layer / sealing).)

Theoretical consumption	**Base layer:** approx. 2.8 – 3.2 kg/m² **Sealing layer:** approx. 1.5 – 2.0 kg/m² (Since the application of both layers occurs manually with scraper / rubber wiper / roll, the actual consumption may vary. The actual consumption also depends on the applied layer thickness and the type and state of the substrate and the grain size of the drop-on aggregates.) **Anti-skid agent:** Bauxite 1-1,5 mm approx. 5.4 kg/m² - 6.5 kg/m² **Condenser**: Related to the complete D485 order quantity (base and sealing layer) approx. 0.7% condenser (Art.-No.: 3044) should be used (see 5.2.).

3 Mixing ratios / Application techniques / Hardener

Product	Art.-No.	Technique	Hardener type
Cold plastic D485 traffic red **Cold plastic D485** coloured	**52503020** **5250….**	Manually application (trowel or squeegee and using roller finally)	Hardener powder
Mixing ratio: reactive component : hardener powder (BPO) **= 100 : 1**			
Between October and April Cold plastic D485 is delivered in winter formulation, due to weather conditions.			

4 Table anti-skid agents

Anti-skid agents	Art.-no.:	Remarks
Bauxite 1-1,5 mm	R10212	Sealed by second layer for high traffic impact (truck traffic) and high SRT values
Bauxite 0.5-1 mm	R10211	Sealed by second layer for high traffic impact and high SRT values
Granoflour red 1-2 mm	R11503	Sealed by second layer for high traffic impact and high SRT values
Glass granulate, transparent	R15542farblos	No sealing required, after curing sweep only. For low mechanical load (pedestrians), for markings with focus on optical impression

5 Processing Instructions

5.1 Preparation of material and application techniques

Cold plastic D485 must be **homogeneously stirred** in its original container before processing! Never prepare more material with hardener than is needed for the application (observe pot life). The hardener (hardener powder) is mixed with the base component at the indicated mixing ratio while using an appropriate stirring device. Cold plastic products (reactive systems) are solvent-free and must be applied without adding any solvent (optimizing of application properties, see 5.2.).

The cleaning must be done before the curing of the material is complete by using special cleaner for marking machines (Art.-No.: 3086).

Theoretical consumption of material and drop-on materials are stated in:

- Table “Theoretical consumption of material and drop-on material” see homepage

5.2 Optimizing of application properties

The application properties and reactivity of the material depends seasonally on temperatures of cold plastic, air and surface. Proper storage conditions improve application conditions partly (see Technical Data).

For optimizing application properties, respectively reduction of viscosity, maximum 1% condenser (Art.-No.: 3044) can be added when temperatures of material, air and surface are low.

Attention: Add the needed agent quantity only, otherwise viscosity or settle properties may change.

6 Surfaces / pre-treatment

6.1 General information

The surface must be dry, clean and 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.

6.2 Concrete or cement-bound surfaces

The pavement components that prevent good bonding, especially on new concrete, including fine mortar layer, concrete slurries, concrete after-treatments as setting retarders, paraffins, impregnations on silicate basis etc. must be a properly removed (e. g. with high pressure waterjet, fine millcut or similar). We recommend conducting test applications in case of doubt and to communicate concerns about cold plastic bounding properties.

Before applying cold plastic concrete or cement-bound surfaces should be pre-treated with primers:

a. by spray technique (paint spray machine) with 2-C EP-primer (Art.-No.: 8609000) or
b. manually (roller) with 2-C primer B71 for concrete (Art.-No.: 8010)

It is essential to have a sufficient and uniform coverage with primer in order to obtain an optimum bonding of the cold plastic and the concrete. Primer consumption may vary depending on the concrete's porosity. The humidity of concrete must not exceed 4% during the application of 2-C primer B71 for concrete. Primers based on epoxide resins are suitable for residual damp surfaces.

6.3 Bituminous surfaces

Any loose components such as chippings must be removed. Special agents used in new pavement asphalt (e. g.: fluxoils, release agents) are detrimental to good bonding of markings or can cause discoloration. Since a mechanical removal is hardly possible, the surface should be exposed to traffic for 4 - 6 weeks.

6.4 Cobbled pavement

Cold plastic D485 is not suitable for cobbled pavement.

6.5 Floor coating

For markings on floor coatings our indoor marking products should be used.

7 Application techniques

The application is done in four steps:

1. Base layer (scraper / rubber wiper) approx. 1.8 - 2.0mm evenly applied corresponds to a consumption of approx. 2.8 - 3.2 kg/m².
2. Abundant drop-on of skid resistance particles onto the wet film (approx. 5.4 - 6.5 kg/m²). Depending on traffic impact, anti-skid requirements, different skid resistance particles may be used. Coarse or fine-rough surfaces result in SRT values from 55 - 90 SRT (see "Table anti-skid agents").

3. When the base layer has cured, the excess anti-skid material can be swept off or vacuum-cleaned (for later use).
4. Sealing with rubber wiper / roll (approx. 1 - 1.5 mm correspond to a consumption of approx. 1.5 - 2.0 kg/m²). In order to avoid to apply the sealing too thickly (this would reduce the SRT value), the cold plastic viscosity is reduced by adding 2% condenser (Condenser, Art.-No.: 3044). This allows for a thinner application by roller (take care of good structure formation of the surface depending on anti-skid agents!) In order to get the required SRT value, anti-skid agents must not be covered completely by the sealing.

Attention: Due to a limited pot life Cold plastic D485 should be applied without any delay to ensure that drop-on agents (see Table 4) are embedded properly in the wet cold plastic base layer.

7.2 Table 2: Measurement by testing institute

Test report-no.	Location	Traffic exposure	Traffic technological properties/ used condition
F1104 (PBS)	Krämerstraße (Rostock)	3.75 years (45 months)	S4
F1104 (PBS)	Krämerstraße (Rostock)	6.9 years (83 months)	S3

*German Road marking Society