

C-Guard® system for concrete protection

C-Guard PU 221 W CL

Two-component, water-vapour-permeable, UV-resistant clear polyurethane coating for concrete

Usage and Properties

C-Guard PU 221 W CL is a two-component clear polyurethane coating for concrete. It is used as a wall or floor coating on concrete surfaces, clay or silicate bricks, etc.

Highlights

- Environmentally friendly and odour-free
- Excellent mechanical properties
- High hardness
- Long service life
- High UV resistance

Field of application

- Clear finishing coat over epoxy floors with coloured chips
- For coating exposed concrete
- Clear finishing coat for floors and walls exposed to high abrasion and chemical attack

Technical properties

Property	Value and conditions
Packaging — Comp. A	2 kg 5 kg 10 kg 15 kg
Packaging — Comp. B	0.4 kg 1 kg 2 kg 3 kg
Mixing Ratio — Parts by weight	A : B = 100 : 20
Mixing Ratio — Parts by volume	A : B = 100 : 20
Pot life	15 °C: 150 minutes 20 °C: 120 minutes 25 °C: 100 minutes
Processing	Minimum 15°C (air and substrate temperature)
Processing — Humidity	Minimum 30 % and maximum 75 % RH
Curing Time (Walkability)	15 °C: 4 - 6 h 20 °C: 2 - 3 h 25 °C: 1.5 - 2 h
Curing	2 days at 20 °C for mechanical load
Curing	7 days at 20 °C for chemical resistance
Further Coatings	After 12 hours at 20 °C
Further Coatings	but no longer than 72 hours at 20 °C

Property	Value and conditions
Consumption — Smooth surface	Approx. 0.09-0.11 kg/m ² /coat
Consumption	At least two coats are required; three are recommended
Shade	Transparent - gloss, semi-matt, matt
Solid Contents	45 ± 2 mass%; 40 ± 2 vol%
Density	1.03 g/ml DIN EN ISO 2811-2 20°C
VOC Content	IIA(j), 140 g/l (2010); product contains: max. 140 g/l

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances out of our control.

Preparation of substrate

The surface (minimum 15°C) must be dry and clean, free of dust and grease. The substrate must have adequate tensile and compressive strength and must not be friable. Contaminants that prevent adhesion, such as grease, oil and paint residues, must be removed using suitable methods. The substrate must be sufficiently strong for its intended use.

Before coating floor surfaces, grind them using a diamond-segment disc or prepare them by shot blasting. Surface strength must be at least 1.5 N/mm². The possibility of moisture ingress from below must be permanently excluded.

For further advice, contact the Chemcolor technical service.

Preparation of material

Before use, warm both containers to room temperature (20°C, minimum 15°C). The mixing ratio is 10 : 2 by weight. The pot life is approximately 120 minutes at 20°C under normal working conditions.

Add component B to component A in the specified ratio and mix thoroughly with an electric mixer for 2-3 minutes at low speed (300-400 rpm). To avoid mixing errors, transfer the mixture into a clean container and briefly mix again.

Application of material

Primer: To prepare a primer coat, dilute C-Guard® PU 221 W CL with 20% soft water.

Finishing coat: Dilute with up to 5% soft water, or to a suitable application viscosity depending on working conditions.

C-Guard® PU 221 W CL can be applied with a brush (synthetic bristles only) or a roller suitable for water-based two-component acrylic coatings. Adjust the viscosity to suit the application method.

Air and substrate temperatures must not be below 15°C, and relative humidity must not exceed 75%. The difference between air, coating and substrate temperatures must be less than 3°C to avoid disrupting drying. Dew-point conditions may cause poor adhesion, drying problems or spots. Drying times refer to 20°C; lower temperatures extend and higher temperatures shorten drying time and pot life. In basements and poorly ventilated areas, ensure adequate ventilation because evaporated moisture prolongs drying and may cause film defects.

The reaction between components A and B produces CO₂ as a by-product. In wet films thicker than 150 microns, it becomes trapped and causes blistering.

Cleaning of tools and surfaces after use

Clean tools and equipment immediately after use with water and soap. Later, use acetone or nitro thinner, or remove residues mechanically.

Storage of material

Shelf life is 12 months from the production date when stored in tightly closed, undamaged original packaging in a dry place at temperatures between +10°C and +25°C.

Remarks

All technical data in this technical data sheet are based on laboratory tests. Actual data may vary depending on application conditions beyond our control.

Do not apply epoxy materials to constantly damp surfaces. Fresh epoxy material must be protected from moisture, condensation and water for at least 24 hours after application. For outdoor applications, apply when the substrate temperature is falling. Application to a warming substrate may cause pinholes from rising air. Under certain conditions, high floor temperatures (underfloor heating) or ambient temperatures may affect the surface appearance. If air and substrate heating is necessary, do not use heaters that emit large amounts of CO₂ or moisture (gas, paraffin or other fossil-fuel heaters), as these may damage the floor surface. Use only electric heaters.

Safety information

- Provide forced ventilation when working in enclosed, unventilated spaces. Do not apply the material near open flames or welding.
- Wear protective equipment during work, including gloves and goggles.
- Before eating and after work, change dirty clothing and wash your hands.
- Follow the safety warnings on the packaging label.

Important notice

- Transport only at temperatures above 5°C; otherwise, the vehicle must be heated.
- Dispose of uncured or unbound material in accordance with applicable regulations. Fully cured material may be disposed of at municipal landfills in accordance with applicable regulations.
- Detailed safety precautions and physical, toxicological and ecological product data are provided in the safety data sheet, available from Chemcolor sales or at www.chemcolor.si.

The harmonised European standard EN 13813, "Screed material and floor screeds - Screed materials - Properties and requirements", specifies requirements for materials used in indoor floors.

C-Guard PU 220/221 W	
Chemical resistances:	
Petrol (super)	5
Diesel	5
Motor oil (10W40)	5
Brake fluid Dot 3	1
Hydraulic oil	5
Skydrol	4
HCl (10%)	5
H ₂ SO ₄	5
NaOH (10%)	5
Detergent pH 6	5
MEK	5
Ammonia (25%)	5
DBP	5
Ethanol (48%)	4
H ₂ O	5
Coffee	5

C-Guard PU 220/221 W	
Chemical resistances:	
Hot pan	5
5...excellent; 0...poor	

	
Chemcolor Sevnica d.o.o. Dolnje Brezovo 35 8290 Sevnica-SLO	
EN 13813-SR-B2.0-AR1-IR18	
Synthetic resin screed / coating for interior areas (installed according to the technical data sheet)	
Fire behaviour:	Efl
Release of corrosive substances:	SR
Water permeability:	NPD
Abrasion resistance according to BCA:	AR 1
Adhesive tensile strength	B 2.0
Resistance to impact:	IR 18
Subsonic noise:	NPD
Sound absorption:	NPD
Thermal insulation:	NPD
Chemical resistance:	NPD
NPD = No Performance Determined	

These data are based on our experience and careful research. Site conditions and knowledge of the work affect the quality of application. Successful work depends on professional assessment of the substrate at handover and practical experience in selecting the appropriate product. Follow the recommendations of the finishing-coat manufacturer and the safety data sheet for this product.