



COATIX® PC 7210 Polyurethane Cement

4K Polyurethane Cement Floor Coating

Product Description

COATIX® PC 7210 Polyurethane Cement is a four-component, water-based polyurethane-cement hybrid floor coating developed for industrial floors exposed to medium and heavy loads. It is prepared on site by mixing a special polyurethane resin, hardener, a selected aggregate blend and a highly UV-resistant pigment paste. Applied in a single layer 4–6 mm thick, it forms a seamless, non-porous, liquid-tight, matt and smooth surface. It offers very high resistance to aggressive chemicals, heavy mechanical loads, impact, abrasion and thermal shock. Thanks to a thermal expansion coefficient similar to that of concrete, it can be used safely in areas with frequent temperature changes; it can be applied without a primer onto 7-day-old new concrete and floors with high moisture content.

Areas of Use

- Food and beverage production facilities: dairy processing plants, dairies, meat processing plants, bakeries, water and beverage bottling lines
- Pharmaceutical production facilities, clean rooms, laboratories and hospitals
- Chemical production and processing facilities, battery manufacturing plants
- Cold stores, freezer rooms and refrigerated loading areas (down to -15°C)
- Warehouses, logistics facilities, dry packing lines and storehouses
- Heavy industry: metalworking, automotive, heavy machinery and steel production
- Commercial and industrial kitchens, canteens, breweries and wineries
- Fruit, vegetable and fish markets, poultry farming and food processing facilities
- Mineral separation plants, aircraft hangars and wastewater treatment plants
- Production areas with intensive forklift and pallet truck traffic

Advantages

- Very high chemical resistance to concentrated and dilute organic/inorganic acids, alkalis, oils and organic solvents
- Resistant to thermal shock thanks to a thermal expansion coefficient close to that of concrete
- Continuous service temperature from -15°C to +70°C; suitable for cold stores
- Can be applied without a primer onto 7-day-old new concrete and damp floors; allows fast construction schedules
- Fully liquid-tight thanks to its seamless, non-porous structure
- Antimicrobial and hygienic; resistant to bacteria and mould growth, suitable for areas operating HACCP-based food safety systems
- High compressive, flexural, impact and abrasion resistance; no brittle failure or delamination
- Low VOC emissions; odour-free and non-tainting from the end of mixing
- Slip-resistant surface (R10); provides safety on wet floors
- Can be put into service within 24 hours after application

Technical Properties

General Information	
Material structure	Water-based polyurethane – cement hybrid (polyurethane cement)
Standard / class	EN 13813:2002 – Synthetic resin screed material (SR-B2.0-AR0.5-IR4)

Components / appearance	Component A: Milky-white liquid polyurethane resin Component B: Amber liquid hardener Component C: Dry special aggregate blend Component D: Liquid pigment paste
Appearance of applied surface	Matt, seamless, smooth surface
Colour	Red, orange, yellow, cream, grey, light grey, green, green/brown, blue (standard colour chart)
Density (mixture)	1.90 kg/L / 20°C (EN ISO 2811-1)
Volatile organic compounds (VOC)	Very low emission; cleanest class for indoor air quality (A+)
Solids content	100% (by weight)
Water absorption	Zero absorption (CP.BM2/67/2)
Service temperature	-15°C / +70°C (for 4–6 mm thickness)
Mechanical and Physical Properties	
Compressive strength (EN 13892-2)	50–55 N/mm ²
Flexural strength (EN 13892-2)	18–21 N/mm ²
Tensile strength (BS 6319-7)	≥ 9 N/mm ²
Modulus of elasticity in compression (BS 6319-6)	3,250–4,000 MPa
Bond strength to concrete (EN 13892-8 / EN 1542)	≥ 2.0 N/mm ² – concrete failure
Impact resistance (EN ISO 6272 / EN 13813)	IR > 4
Wear resistance (EN 13813)	AR 0.5
Coefficient of thermal expansion (ASTM C531)	$3.6 \times 10^{-5} / ^\circ\text{C}$
Slip resistance – wet, slider 96 (EN 13036-4)	PTV 35
Surface slip resistance class (DIN 51130)	R 10 V
Application Information	
Mixing ratio (A / B / C / D)	13.5 / 14 / 72 / 0.5 (% by weight) 2.70 / 2.80 / 14.40 / 0.10 kg
Thinner	Do not thin
Application method	Spreading with an adjustable steel screed bar or a steel notched trowel; air bubbles are released with a spiked roller
Pot life	+10°C: ~ 10 minutes +25°C: ~ 5 minutes (pour onto the floor immediately after mixing)
Application thickness	4–6 mm (in a single layer)
Consumption	8–10 kg/m ² for 4 mm thickness 12–14 kg/m ² for 6 mm thickness Scratch (intermediate) coat: 1.5–2.0 kg/m ²
Application temperature (ambient)	+12°C / +35°C (ideal +15°C / +25°C)
Substrate (surface) temperature	+12°C / +30°C

Product temperature	+18°C / +25°C
Substrate condition	Can be applied onto 7-day-old concrete; there must be no standing water on the floor
Time to Traffic	
Foot traffic	12–24 hours / 23°C
Light wheeled traffic	24 hours / 23°C
Heavy traffic and full chemical resistance	7 days / 23°C
Safety Information	
Reaction to fire class (EN 13501-1)	B _s -s1
Hazardous substances	Refer to SDS

Mechanical values were obtained at +23°C ambient temperature under laboratory conditions after 28 days of curing. Application values are given at +23°C ambient temperature and 50% relative humidity; higher temperatures shorten pot life and curing times, lower temperatures extend them.

System Examples

Thickness 4 mm

Layer	Product	Consumption
Primer	COATIX® EP 1180 Primer + quartz sand	600 g/m ²
Scratch coat (intermediate coat)	COATIX® PC 7210 Polyurethane Cement	1.5–2.0 kg/m ²
Top coat	COATIX® PC 7210 Polyurethane Cement (4 mm)	6–8 kg/m ²

Thickness 6 mm

Layer	Product	Consumption
Primer	COATIX® EP 1180 Primer + quartz sand	As required
Scratch coat (intermediate coat)	COATIX® PC 7210 Polyurethane Cement	1.5–2.0 kg/m ²
Top coat	COATIX® PC 7210 Polyurethane Cement (6 mm)	10–12 kg/m ²

If the scratch coat (intermediate coat) is not applied, the consumption specified for it must be added to the top coat. For other thicknesses, slip-resistant (textured) surfaces and skirting details, please contact our technical sales team.

Application Instructions

Surface Preparation

The surface to be coated must be sound, clean, dust-free and load-bearing. The cementitious substrate must have a compressive strength of at least 25 N/mm² and a surface tensile strength of at least 1.5 N/mm². Laitance, weak parts, oil, grease, old coatings and surface treatments must be removed by mechanical methods such as shot blasting, scarifying or diamond grinding, and the resulting dust must be removed with an industrial vacuum cleaner. The system can be applied onto fresh or damp concrete without standing water; however, to prevent shrinkage cracks, the concrete should be allowed to age for at least 7 days (3 days for polymer screeds). A functioning damp-proof membrane (DPM – Damp Proof Membrane) must be present in the floor build-up to be coated. The substrate temperature must be at least 3°C above the dew point.

Repair of Joints and Cracks

Construction joints and existing static surface cracks in the substrate require pre-treatment before coating. Cracks and bay joints are opened into a V-section with a suitable chasing machine, cleaned of dust and filled with COATIX® EP 1180 Primer mixed with quartz sand to a paste consistency, using a trowel or spatula. Moving (dynamic) joints

must be carried through the coating and sealed with a suitable joint sealant. The edges of the coating must terminate in anchor grooves at least 6 mm deep.

Application of the Scratch (Intermediate) Coat

To seal the capillary pores of the prepared concrete surface, increase surface strength and ensure the adhesion of the top coat, COATIX® PC 7210 Polyurethane Cement, mixed in the correct ratios, is applied as a scratch coat at an average consumption of 1.5–2.0 kg/m², forming a 1 mm layer. The top coat must be applied within 24 hours at the latest; if this time is exceeded, the surface must be mechanically roughened and the scratch coat renewed.

Mixing

All components must be mixed at once. Use a wide plastic or metal container large enough to mix the 20 kg set comfortably. First, pour component A (resin), component B (hardener) and component D (pigment paste) into the container and start mixing with a low-speed (300–400 rpm) paddle mixer. While mixing, slowly add component C (aggregate) and continue mixing for 2.5–3 minutes until the mixture is completely homogeneous. Scrape material adhering to the sides and bottom of the container into the mix with a spatula or steel trowel. As the pot life is very short, pour the material onto the floor immediately after mixing.

Application of the Coating

The mix is poured onto the floor and spread with an adjustable steel screed bar or notched trowel according to the required thickness and consumption per m². At the same time, a second applicator releases the air bubbles from the surface by rolling in one direction with a spiked roller. The spiked roller must not be used on the spread surface for more than 5–6 minutes and must not be taken back to the starting point; otherwise, as curing has begun, roller marks and surface defects will occur. Application is continued without interruption, maintaining a wet edge. If a slip-resistant (textured) surface is required, the surface profile is created by a suitable texturing technique or by broadcasting quartz.

Chemical Resistance

Chemical	Concentration	Resistance
Resistance to acids		
Sulphuric acid (H ₂ SO ₄)	10%	3
Sulphuric acid (H ₂ SO ₄)	50%	2
Hydrochloric acid (HCl)	10%	3
Hydrochloric acid (HCl)	36%	2
Nitric acid (HNO ₃)	10%	3
Phosphoric acid (H ₃ PO ₄)	50%	3
Acetic acid (CH ₃ COOH)	10%	3
Lactic acid (CH ₃ CHOH-COOH)	20%	3
Citric acid	50%	3
Oleic acid / fatty acids	100%	3
Resistance to alkalis		
Sodium hydroxide (NaOH)	50%	3
Ammonia (NH ₃)	25%	3
Resistance to solvents and others		
Vegetable and animal oils	100%	3
Mineral oils, engine and hydraulic oils	100%	3
Petrol, diesel, kerosene, brake fluid	100%	3
Methanol / ethyl alcohol	100%	3

Chemical	Concentration	Resistance
Xylene	100%	2
Chlorinated solvents and ethers	100%	2
Sugar solutions, flavourings and essences	100%	3

3 Highly resistant to the listed chemicals.

2 Resistant to the listed chemicals.

1 Not resistant to the listed chemicals.

~ Tendency between the two values.

Inks and fruit juices do not damage the chemical structure of the coating; however, they may leave colour on the surface or cause discolouration.

Depending on exposure time, temperature and cleaning regime, some chemicals may cause staining or discolouration of the surface; this does not affect the integrity or performance of the coating. For environments with chemicals not listed in the table, please consult our company. Values were obtained at +23°C under laboratory conditions after full curing.

Limitations

- The product must be applied only by trained and experienced professional application teams.
- The entire set must be mixed at once; partial (split) mixing is not permitted. Components from opened and stored packaging must not be reused.
- The pot life is very short; pour the material onto the floor immediately after mixing and spread it without delay.
- Apply the product when the substrate and ambient temperatures are between +12°C and +35°C; the ideal range is +15°C to +25°C.
- The substrate temperature must be at least 3°C above the dew point; otherwise condensation, blistering, white staining and loss of adhesion will occur on the surface.
- There must be no standing water on the floor, and a functioning damp-proof membrane (DPM) must be present in the structure.
- Dynamic (moving) joints must be carried through the coating and sealed with a suitable joint sealant.
- The product is solvent-free and must not be thinned with any thinner.
- In areas exposed to continuous UV radiation, some yellowing may occur, especially in light colours; this does not affect the mechanical and chemical performance of the coating.
- The spiked roller must not be used on the spread surface for more than 5–6 minutes.
- Do not use in environments containing chemicals rated as not resistant (1) in the chemical resistance table.
- If heating is required in the application area, use only electric warm-air blowers; do not use gas, oil or paraffin heaters.
- Protect the surface from water, moisture and mechanical stress until curing is complete.

Cleaning of Tools

After application, all tools and equipment must be washed with water before the product hardens. Packaging and equipment that have been in contact with component B (hardener) must be decontaminated with a 5% sodium carbonate (washing soda) solution and disposed of in accordance with local regulations. Hardened and/or cured material can only be removed mechanically.

Storage Conditions and Shelf Life

Container lids must be kept closed and label information complete. Follow the first-in, first-out rule and monitor expiry dates. The storage area must be dry, cool, free of humidity and well ventilated; packages must be stored on pallets so that they are not in direct contact with the floor. Protect the components from frost and direct sunlight. When stored between +5°C and +30°C in unopened original packaging, the product has a shelf life of 12 months from the date of manufacture for components A, B and D, and 6 months for component C (aggregate).

Safety Precautions

Observe the hazard and precautionary statements, safety signs and warnings on the packaging. During application, wear suitable work clothing, protective gloves, goggles and a mask in line with occupational health and safety requirements, and ensure adequate ventilation. Avoid contact of the components with skin and eyes; in case of

contact, wash immediately with plenty of soap and water; if swallowed, seek medical advice immediately. Do not inhale vapours and keep away from open flames. Store out of the reach of children.

Liability

Our company is responsible only for the quality of the product. Any use of the product outside the scope of the written technical recommendations, including incorrect application or use under unsuitable conditions, is entirely the responsibility of the user. For more detailed technical information, please refer to the product catalogue or contact our representatives.

Packaging

Component A 2.70 kg + component B 2.80 kg + component C 14.40 kg + component D 0.10 kg = 20 kg set

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