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0749 / EN 1504-2

PC[®] 4840 PUREA

Polyurea Spraycoating

1. Description

The **PC[®] 4840 PUREA** is a 2-component polyurea spraycoating. It is a solvent-free spraycoating with a fast curing time.

2. Applications

The **PC[®] 4840 PUREA** coating system is a sprayed waterproof protection layer in following cases: protection of tubes, coatings for (repair) soil pipes, drainpipes, drainage canals, tank farms, industrial floorings, roof coverings, parking lots, conveyers, pavements, retention pounds, bridges, ...

3. Properties

Polyurea coatings combine a high flexibility with a high hardness. The **PC[®] PUREA** coating system is the best solution when the protection layer must respond to following requirements:

- Fast curing
- Application possible at high relative air humidity and/or low temperature. However, one must always ensure that the temperature of the substrate is 3°C above the dew point
- Extreme abrasion resistance
- Impermeable membranes
- High chemical resistance

Furthermore it's a seamless coating system.

4. Technical Properties (typical values)

- Colour: grey or black
- Gel time: 3 sec., stick-free after 5 sec.
- Curing time: 2 hours (pedestrians), 12 hours for normal traffic
- Tensile strength (EN ISO 527-3): 21 N/mm²
- Elongation at break (EN ISO 527-3): 295 %
- E-modulus (EN ISO 527-3): 131 N/mm²
- Shore D (ISO 868): 50
- Taber abrasion resistance (ASTM D 4060): no weight loss after 1000 cycles with a CS-10 sanding wheel with a weight of 1 kg.
- Impact resistance (EN ISO 6272-1): > 20 Nm (Class III)
- Adhesion with concrete (EN 1542): > 2,5 N/mm² (rupture in concrete with use of PC[®] 5001/T as primer)
- Freeze-thaw cycling with de-icing salt immersion (50 x) and thermal shock (10 x) (EN 13687-1 + en 13687-2)
 - Observation : no bubbling, cracks or delamination
 - Pull-off strength : > 1,5 N/mm²
- Resistance against high chemical exposure (EN 13529): Class 1
- Shelf life: 24 months after production date in the original, unopened packaging. Stored in a dry place between +5°C and 30°C.

A review of all the performance tests executed within the framework of the ATG certification can be obtained on demand.

5. Chemical resistance

The samples were immersed in the chemicals for 15 days at 20°C.

Product	Result
Benzene	Sp. contact OK
Dichloormethane	OK
Tetrahydrofurane	Not OK
Diethylether	OK
Sulpheric acid 5%	OK
Sulpheric acid 10%	Sp. contact OK
Sulpheric acid 98%	Not OK
NMP	Not OK
Toluene	Sp. contact OK
Nitric acid 20%	OK
Nitric acid 40%	Sp. contact OK
Nitric acid 68%	Not OK
Acetone	Not OK
Methanol	OK
Hydrochloric acid 37%	Sp. contact OK
Phosphoric 85%	OK
Ethanol	Sp. contact OK
Acetic acid 5%	Ok
Acetic acid	Not OK
Formic acid	Not OK
Ethylbenzene	Not OK
NaOH 25%	OK
Xylene	OK
Dieseloil	OK
BZA	Not OK
Synthetic oil	OK
Pine oil	OK
Jeffsol EC 50	OK
Propylene carbonate	OK
Gasoline	OK
Saturated solution of ammonium nitrat	OK

- Sporadic contact means that spilled product must be cleaned within 4 hours with plenty of water.
- OK means that the integrity and physical characteristics remain the same. However a discoloration of the surface can appear under the influence of the chemicals.

6. Processing

- The concrete has to be dry (moisture content < 3%), clean and strong enough and has to be at least 1 month old. The surface has to dispose of a sufficient compression strength of min. 25 N/mm² with a min. tensile strength of 1,5 N/mm².
- Any dirt, cement ore loose parts have to be removed by blasting or another suitable method and the surface has to be dust free.
- Apply a suitable primer (for more info, please contact the technical responsible person of TRADECC).
- Apply **PC® 4840 PUREA** in 2 crosswise sprayed layers with a two component high pressure machine, type GUSMER, which allows the heating of separate components of **PC® 4840 PUREA**. **PC® 4840 PUREA** can be applied on the hardened primer PC® 5001/T or on the scratchcoat PC® 5284 FILLER.

- You can't get rid of possible dilatation joints on the surface. They have to maintain their function.
- To put a Polyurea membrane is only long-lasting if the surface is free of vapor pressure by placement of a suitable sealing foil (polyethylene or equal).
- Never apply **PC® 4840 PUREA** in case of negative H₂O pressure.

7. Consumption


- Consumption: 1,1 – 1,3 kg/m² for 1 mm thickness
- Cross-spray according to ATG: 2 layers of 1,5 till 2,5 mm thickness

8. Cleaning

- Uncured product can be removed with acetone or the cleaning agent PC® 5900.
- Machinery and hoses clean with PC® Ecoclean.

9. Precautions and safety requirements

- Avoid contact with the skin and the eyes
- Wear safety glasses, gloves and an overall
- Make sure that the products do not come into contact with water or moisture
- For more information: see Material Safety Data Sheet

 0749	
ECC N.V. Terbekehofdreef 50 – 52 B-2610 Wilrijk 09 0749 - CPD BC2-562-1895-0001-001	
EN 1504-2 Surface protection product – Coating Principle 5: Physical Resistance Principle 6: Chemical resistance	
Adhesion strength by pull-off test	≥ 1.5 N/mm ²
Resistance to severe chemical attack	Class I: pass
Abrasion Resistance	Pass
Impact Resistance	Class III: pass
Capillary absorption and permeability to water	w < 0.1 kg/m ² .h ^{0.5}
Linear shrinkage	NPD
Compressive strength	NPD
Coefficient of thermal expansion	NPD
Adhesion by cross-cut test	NPD
Freeze-thaw cycling with de-icing salt immersion	Pass
Thunder-shower cycling (thermal shock)	Pass
Resistance to thermal shock	Pass
Crack bridging ability	Pass
Slip/skid resistance (scattered with quartz 0.7mm -1.25 mm)	Class III
Behaviour after artificial weathering	NPD
Antistatic behaviour	NPD
Adhesion on wet concrete	NPD
Dangerous substances	comply with 5.4
Reaction to fire	Euroclass F