HYGROSMART®-PU-CEMENT-3K

Polyurethane Concrete Flooring System for high performance industrial flooring applications

DESCRIPTION

HYGROSMART®-PU-CEMENT-3K is a three-component polyurethane flooring system designed for high performance industrial floors applications. Thanks to its high hardness and compression strength **(>60 MPa)** it is suitable for use heavy duty industrial floors in the field of the food and beverage industry, chemicals industry, pharmaceuticals, healthcare area, electronics, mechanical engineering.

HYGROSMART®-PU-CEMENT-3K is recommended for conditions requiring maximum mechanical, physical and chemical resistance, while due to its smooth finish the use of a topcoat is optional.

HYGROSMART®-PU-CEMENT-3K is a non-toxic product in case of contact with food products and drinking water. It can be used indoors and outdoors – slight discoloration is expected.

RECOMMENDED FOR

- Protection of industrial floors in food and beverage industry, chemical industry, pharmacy, healthcare area, electronics, mechanical engineering.
- Anti-static, non-sparking, anti-slip, anti-bacterial, non-dust and decorative coatings.

FEATURES & BENEFITS

- Excellent adhesion to all construction materials.
- Sound, monolithic, wear resistant coat.
- Delivers a smooth surface and the use of a topcoat is optional (see above)
- Resistant to wide range of temperature, non-combustible
- Fast curing
- Warm water resistance (60 ºC - 90 ºC).
- Excellent biological and chemical resistance.
- Can be applied to humid substrates.
- Non-toxic, hygienic material.
- Negative hydrostatic pressure resistant.

APPLICATION

Concrete substrate conditions (standard):

- Hardness: R_{28} = 15MPa.
- Humidity: W < 10%.
- Temperature: 5-35 ºC.
- Relative humidity: < 85%.

Surface preparation:

Clean the surface using a high-pressure washer, if possible. Remove oil, grease and wax contaminants. Cement laitance, loose particles, mold release agents, cured membranes must also be removed. Fill surface irregularities with the necessary product.

Poor quality or contaminated substrates cannot be made satisfactory by priming.

Mixing:

Mix part C and part B. Blend parts for 1-2 minutes and then add part A. Mix for 3-4 minutes until the liquid becomes homogeneous. Use spiral slow-speed mixer (150-200rpm). The consistent mix must be spread up to a recommended thickness of 4-10mm as soon as the mixing is properly done. Use steel trowel to smooth the new coating. Use spike roller to free the closed gases.

CONSUMPTION

Indicatively around 2 kg/m2/mm thickness.

CLEANING

Clean tools and equipment using SOLVENT-01 or xylene.

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PACKAGING

Part A: 3,50 kg.
Part B: 3,50 kg.
Part C: 17,2 kg.

SHELF LIFE

Can be kept for 6 months minimum in the original unopened pails in dry places and at temperatures of 5-30 °C.

TECHNICAL SPECIFICATIONS

The liquid product:

PROPERTY	UNITS	METHOD	SPECIFICATION
Specific weight	gr/cm3	ASTM D1475 / DIN 53217 / ISO 2811, at 20 °C	1.85
Pot life (20 °C & 55% RH)	min	Internal method	12-15
Tack free time, @ 77 °F (25 °C) & 55% RH	hours	-	3

The cured coating:

PROPERTY	UNITS	METHOD	SPECIFICATION
Service temperature	°C	-	-15 to 100
Max. temperature short time (shock)	°C	-	250
Hardness	Shore D	ASTM D2240 / DIN 53505 / ISO R868	>80
Tensile strength at break @ 23 °C	Kg/cm^2 (N/mm^2)	ASTM D412 / EN-ISO-527-3	>90 >9
Water vapor transmission	$gr/m^2.hr$	ASTM E96 (WATER METHOD)	Not applicable
Light traffic at 25 °C & 55% RH	hours	-	24
Heavy traffic	days	-	3
Adhesion to concrete	Kg/cm^2 (N/mm^2)	ASTM D4541	>30 >3
Compression strength	(N/mm^2)	-	>60
Shrinkage	%	-	Not applicable
Resistance to acids, solvents, lubricants etc.	-	ASTM G53	Individual data upon request

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Chemical resistance tests over 12-month period:

EXPOSED TO	RESULT
Acetic acid 10%	tiny holes appear after 10 days
Acetone	soft after 10 days
Alcohol 10%	OK
Ammonia 10%	tiny holes appear after 20 days
Chloride 10%	OK
Chloride acid 10%	OK
Citric acid 10%	OK
Cresol	damaged after 5 days
Distilled water	OK
Drinking water	OK
Ethyl glycol acetate	OK
Fatty acids	OK
Formic acid 10%	tiny holes appear after 8 days
Gasoline	OK
Hydrogen peroxide 10%	OK
Lactic acid 25%	OK
Methylene chloride	damaged after 1 day
Nitric acid 10%	OK
Potassium hydroxide 10%	OK

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Sea water	OK
Sodium hydroxide 10%	OK
Sodium hypochlorite 3%	OK
Sugar 30%	OK
Sulfuric acid 10%	OK
Tannic acid	OK
Xylene	OK

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