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CE

WHITECHEM POLYUREA HB 1010

1 – PRODUCT DESCRIPTION

WHITECHEM POLYUREA HB 1010 is a very fast set, rapid curing, flexible, two component hybrid polyurea system. It is derived from a reaction of an isocyanate prepolymer and an amine terminated resin blend. It can be applied as an economic waterproofing and coating alternative to pure polyurea products. The material must be applied utilizing high pressure, heated plural component spray proportioning equipment. Polyurea HB 1010 conforms the requirements of the EN 1504-2 standard (concrete surface protection systems).

2 – FEATURES

- Economic alternative to pure polyurea products
- Fast reactivity and return to service time
- 100% solid, VOC free, no solvents
- Environmentally friendly
- Seamless coating
- Very good tensile and structural strength
- Excellent adhesion on concrete, steel, aluminum, plastics, fibers, wood, foam etc.
- Excellent flexibility
- Excellent crack bridging properties
- Variable application thickness possible
- Broad color spectrum

3 – APPLICATION AREAS

- General waterproofing under ceramic, screed concrete, marble and other floor coverings
- General waterproofing for light foot traffic areas like roofs, balconies, terraces, walkways and public areas
- Waterproofing of ground concrete and load bearing walls
- Play grounds and decorative applications
- On thermal insulation products for waterproofing (polyurethane foam, EPS, XPS etc.)

4– SURFACE PREPARATION & APPLICATION PROCEDURE

Surface Preparation: Surface preparation strongly affect coating performance. Concrete substrates must be prepared mechanically using abrasive blast cleaning to remove cement laitance and achieve an open textured surface. Weak concrete must be removed and surface defects such as voids must be fully exposed. Repairs to the substrate, filling of blowholes/voids

and surface levelling must be carried out using appropriate products. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum. For application pull off strength of the surface should be min. 1.5 N/mm^2 and concrete residual moisture should be max. 4% pbw (with an appropriate moisture tolerant primer should be max. 6% pbw). The moisture content should be measured by moisture meter. Be aware of condensation; the substrate must be at least 3 °C above dew point to reduce the risk of condensation of the coating. Relative air humidity for application should be lower than 85%. Prior to application, confirm substrate moisture content, relative air humidity and dew point.

Application conditions/ limitations:

	Surface Temperature	Ambient Temperature	Relative Air Humidity
Optimum	5-30 °C	20-30 °C	25-50 %
Minumum	0 °C	0 °C	0%
Maximum	50 °C	50 °C	85 %

Priming: The application surface has to be primed in order to achieve an even surface and good adhesion. Lightly broadcasting with quartz sand 0,3-0,8 mm is recommended because this provides higher adhesion values and extends the maximum waiting time of primer prior to the application of polyurea cooating. In order to avoid the formation of blisters do not broadcast to excess.

Polyurea Application: The polyurea must be applied within 12-24 hours of applying the primer. Isocyanate prepolimer and amine resin must be applied using a two component high pressure and heat spray machine. The machine should be able to spray the components in 1:1 volume ratio. Both components must be heated above 70 °C. In order to achieve good performance, the temperature and pressure should stay same during the application and must be controlled regularly. Polyurea system components might not diluted under any circumstances. Before application, amine component must be stirred at least 30 minutes using a barrel mixer until a homogenous mixture and colour obtained. Aromatic polyurea coating systems are UV stable but are not color stable. The cured coating may exhibit discoloration when exposed to sunlight. This does not influence the performance and physical properties of the material. If the color stability required, an aliphatic top coat must be applied within 12 hours of applying base coat.

Consumption of Coating Components:
Primer: 0,3-0,5 kg/m2
Quartz sand: 1-1,5 kg /m2
Polyurea coating: 1,05- 1,1 kg/m2 /mm (recommended film thickness is minimum 2 mm.)

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5 – PACKAGING

200 kg barrel (Amine component)
225 kg barrel (Iso component)

6 – COLORS

Standard color is medium grey. Custom colors any RAL number are available upon request.

7 – SHELF LIFE & STORAGE CONDITIONS

Polyurea components are sensitive to moisture. Keep polyurea components in tightly closed containers. Mix amine resin before application. Store polyurea components between 20-30°C. Shelf life of the unopened original packaging is nine months from manufacturing date.

8 – SAFETY

Contains isocyanate MDI. Avoid breathing vapors. Avoid contact with skin and eyes. Take precautions during application. Wear suitable protective clothing, gloves and eye/face protection. Adequate ventilation of the working area is recommended. Refer to SDS sheet prior to use.

9 – TECHNICAL FEATURES

Component Properties

	UNIT	METHOD	ISO COMPONENT (A)	AMINE COMPONENT (B)
Density (25°C)	gr/cm^3	ASTM D 1217	1,11±0,03	1,02±0,02
Viscosity (25°C)	mPa.s	ASTM D 4878	700-800	300-600
Shelf life	-----	-----	9 months	9 months

Process Properties

	UNIT	DATAS
Mix Ratio	By volume	A=100 B=100
	By weight	A= 112 B= 100
Process temperature (°C)	°C	A: 70-80 B: 70-80
Process pressure (bar)	Bar	A: 180-200 B: 180-200

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Physical Properties

	METHOD	DATAS
Chemical structure		A: MDI Prepolymer B: Amine Resin
VOC content (%)	ASTM D1259	0
Solid content (%)	ASTM D2697	100
Gel time (sec)	--	5-10
Tack free time (sec)	--	15-30
Recoat time (hr)	--	0-12 (without any pretreatment)
Density (gr/cm^3)	ASTM D792	0,99-1,03
Tensile strength (MPa)	ASTM D638	≥15
Modulus (MPa)	ASTM D638	%100 elongation ≥ 5
Elongation at break (%)	ASTM D638	≥350
Hardness (Shore A)	ASTM D2240	90-95
Tear strength (N/mm)	ASTM D-624	≥25
Taber abrasion (mg)	EN ISO 5470-1	<250 (H22, 1000 cycle)
Impact resistance	EN ISO 6272-1	Class III
Pull off strength (N/mm^2)	ASTM D4541	Concrete: ≥3 Steel: ≥6

DISCLAIMER

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