MAXURETHANE® CEM-V

POLYURETHANE-CEMENT MORTAR COATING FOR VERTICAL SURFACES WITH HIGH CHEMICAL AND MECHANICAL PERFORMANCES

DESCRIPTION

MAXURETHANE® CEM-V is a three-component, water-based, polyurethane-cement mortar, to be applied by trowel in layers up to 10 mm. It is designed to provide a continuous coating with slightly textured finish and excellent resistance to abrasion, impact, thermal shock and chemical contact.

APPLICATION FIELDS

- Coatings in petrochemical, pharmaceutical, food industry, etc., with very high mechanical and chemical requirements
- Vertical coatings subject to thermal shock and cycles by steam cleaning, hot liquid spills, high temperature industrial environments, freeze chambers, etc.
- Very high chemical-resistant vertical coating in industrial facilities against cleaning agents, degreasing surfactants, fats, diluted alkalis and acids, hydrocarbons and other aggressive compounds.

ADVANTAGES

- Higher thermal resistance than epoxy coatings: from -40 °C up to +150 ºC.
- Allows steam cleaning treatments with thickness above 9 mm.
- High mechanical properties, compressive strength, abrasion, impact, mechanical cleaning, etc.
- Excellent chemical resistance, higher than epoxy-based systems.
- Allows application on 7 days concrete and on slightly moisture surfaces.
- Suitable for applications up to 10 mm thick.
- Continuous coating, with no construction joints.
- Environmentally friendly: non-toxic, solvent-free and non-flammable. Suitable for use in bad ventilated areas.

APPLICATION INSTRUCTIONS

Surface preparation

Surface must be structurally sound, firm, without cement laitance and as uniform as possible, and preferably with a slight roughness, i.e. open textured surface. Minimum bond strength of substrate must be above 1,5 N/mm^2.

For cleaning and preparing the substrate, preferably in case of the smooth and/or poorly absorbent concrete and cement mortars, provide a mechanical texturing by abrasive disc, dry sand-blasting, scarification or other abrasive method to achieve at least a slightly textured surface, not being desirable aggressive mechanical or chemicals means. Finally, vacuum the dust and loose particles.

Voids, holes, honeycombs, cavities, cold joints, and static cracks without movement or any others defects deeper than 10 mm, once opened and routed must be repaired with patching mortar ***MAXREST®*** (Technical Bulletin No. 8).

New concrete should be cured for at least 7 days. Surface moisture content should not exceed 8 %. Do not apply on substrates subject to rising damp or negative water pressure.

Surface must be clean and free of paints, coatings, efflorescence, loose particles, grease, oils, curing agents, form release agents, dust, gypsum plasters, organic growth or any other contaminant that may affect to adhesion of the product.

Mixing

MAXURETHANE® CEM-V is supplied as a three-component pre-weighed set. Premix liquid components A and B separately, pour them to a clean container and mix until achieving a homogeneous liquid, using a slow speed electric drill (300-400 rpm) fitted with a disc mixer. Then, add gradually component C powder to the liquid and mix as before, for about 2-3 minutes until achieving a smooth, lump-Vree and

homogeneous consistency mortar. Do not mix for prolonged period nor use high-speed mixer, which may heat the mixture or introduce air bubbles. Allow the mortar to rest for 5 minutes to fully wet out all the powder and then remix again briefly before application. Check Technical Data Table for the pot life of the product (20 minutes at 20° C). This pot life is reduced progressively with higher application temperatures.

Application
On very porous substrates, apply previously ***MAXURETHANE® CEM PRIMER*** (Technical Bulletin No. 369) with a consumption from 1,5 to 2,0 kg/m^2 by brush or roller, and allow to dry 24 hours (at 20 ºC). Drying time for primers depends on temperature, relative humidity, ventilation, substrate porosity and material used. Surface moisture content should not exceed 5 % before primer application.

Place and spread ***MAXURETHANE® CEM-V*** in a single step by trowel or screed, with layers from 3,0 to 10,0 mm thickness.

Apply on delimited sections in advance that should be finished completely to avoid cold joints in non desired places. Expansion joints must not be covered and should be sealed with a suitable flexible sealant from ***MAXFLEX®*** range.

Application conditions
Do not apply in rain or when rain, contact with water, condensation, dampness and dew is expected within the first 24 h after the application.

Optimum application temperature range is from 5 ºC to 30 ºC. Do not apply with substrate and/or ambient temperature is at or below 5 °C, or when are expected to fall below 5 °C within 24 h after application. Do not apply to frozen or frost-covered surfaces.

Ambient and surface temperature must be at least 3 ºC higher than dew point. Do not apply with R.H. higher than 85 %. Measure the relative humidity and dew point before applying the product.

With low temperatures, high humidity levels or both, use dry and warm air in order to get the suitable conditions, such as with an electric powered air blower system.

Temperatures above 30 ºC lead a quick-setting between components and heat production, so the pot life is greatly reduced. Avoid applications in areas exposed directly to sunlight at high temperatures.

Curing
Allow ***MAXURETHANE® CEM-V*** to cure for at least 48 hours at 20 °C and 50% R.H. before putting into service. Applications at lower temperatures, high humidity and/or poor ventilation conditions require longer drying and curing times.

Cleaning
All mixing and application tools, and equipment must be cleaned immediately with ***MAXSOLVENT®*** after use. Once product cures, this can only be removed by mechanical means.

CONSUMPTION

Estimated consumption of ***MAXURETHANE® CEM-V*** is 2,0 kg/m^2 per mm thickness.

Consumption may vary depending on porosity, texture, substrate conditions and application method. A preliminary test on-site will determine the total consumption exactly.

IMPORTANT INDICATIONS

- Surface moisture content of substrate must not exceed 5%. Do not apply on substrates subject to rising humidity or negative water pressure.
- Avoid contact with water, damp, dew, condensation, etc for at least 24 hours after application. Relative humidity must not exceed 85%. If so, an improper curing or loss of colour intensity may happen.
- Mix mechanically full sets units and do not use leftovers of previous mixes.
- Do not add cements, solvents, thinners, additives, or other compounds.
- Use the recommended mixing ratios for all compounds.
- Different mixing ratios, application thickness, surface porosity, curing conditions, etc may produce light differences of colour intensity.
- Observe the recommended thickness and consumptions per application.
- For other uses not specified in this Technical Bulletin, further information or questions regarding the application of the product, consult the Technical Department.

PACKAGING

MAXURETHANE® CEM-V is supplied in pre-weight three-component set of 30,99 kg: Component A in 2,75 kg plastic can, Component B in 3,24 kg plastic can and Component C in 25 kg bag. It is available in standard grey, white, red and green colour.

STORAGE

Twelve months in its unopened original packaging. Store in a cool, dry and covered place, protected from moisture, frost and direct sunlight, with temperatures from 5 ºC to 35 °C.

SAFETY AND HEALTH

MAXURETHANE® CEM-V is not a toxic product but is an abrasive compound. Avoid direct contact with skin and eyes, and breathing dust. Use rubber gloves and safety goggles when mixing and applying the product. In case of skin contact, wash affected area with soap and water. In case of eye contact, rinse immediately thoroughly with clean water but do not rub. If the irritation persists, seek medical assistance.

Consult the Material Safety Data Sheet for ***MAXURETHANE® CEM-V.***

Disposal of the product and its packaging should be carried out according to the current official regulations and it is the responsibility of the final user of the product.

TECHNICAL DATA

Product characteristics	
General appearance and colour	Grey, white, red or green mortar
Density components A / B / C, (g/cm^3)	0,99 / 1,23 / 1,39 ± 0,1
Density fresh mortar (A+B+C), (g/cm^3)	2,0 ± 0,1
Density for cured and dry product, (g/cm^3)	1,95 ± 0,1
Application and curing conditions	
Minimum application temperature for substrate and ambient, (ºC)	> 5
Pot life at 20ºC, (min)	20
Initial/Final setting time at 20 °C, (h)	1-2 / 3-4
Total curing time al 20 ºC & 50% H.R., (h)	48
Cured product characteristics	
Compressive strength at 28 days, EN 13892-2 (N/mm^2)	> 40
Flexural strength at 28 days, EN 13892-2 (N/mm^2)	> 10
Adhesion on concrete at 28 days, EN 13892-8 (N/mm^2)	> 3 (break concrete)
Temperature resistance - ≥ 4,0 mm thick - ≥ 6,0 mm thick - ≥ 9,0 mm thick - ≥ 12,0 mm thick	 From -15 °C to +60°C From -25 °C to +70°C From -40 °C to +120°C From -40 °C to +130°C (Occasionally up to +150 °C)
Thickness / Consumption*	
Minimum and maximum thickness per layer, (mm)	3 - 10
Consumption per layer, (kg/m^2·mm thickness)	2,0

* These figures are for guidance only and may vary depending on porosity, texture and conditions for substrate, and application method. Perform a preliminary test on-site to ascertain the total consumption exactly under jobsite conditions.

GUARANTEE

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. ***DRIZORO®, S.A.U.*** reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. These data are subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. In order to know the real data, a test on the jobsite must be done, and it will be carried out under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.

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