MAXEPOX® NOVOLAC

PHENOLIC EPOXY COATING (NOVOLAC) WITH HIGH CHEMICAL RESISTANCE CE

DESCRIPTION

MAXEPOX® NOVOLAC is a two-component, solvent-free, phenolic epoxy formulation (pure novolac) suitable for its application in tanks and areas which require a high level of chemical resistance.

MAXEPOX® NOVOLAC can be applied as a coating on concrete and metal surfaces, with high thickness coating (1 mm) and allowing for a smooth or anti-slip finish.

APPLICATION FIELDS

- Coating for chemical storage areas, petrochemical plants, industrial plants, laboratories, battery manufacturing and storage areas, etc.
- Waterproofing and chemical protection for concrete and metal tanks and pipelines in contact with hydrocarbons, petroleum, solvents and aggressive chemicals in high concentrations.
- Coating for the pulp and paper industry with continuous exposure to electrolytes.
- Primary and secondary chemical bunds.
- Retention basins for above-ground tanks.
- Water and waste treatment plants.
- Coating of tanks for the containment or drainage of aggressive chemicals, areas exposed to spills and/or splashes.
- Rooms and areas subject to high temperatures and acid vapours.

ADVANTAGES

- Great chemical resistance in dry and permanent immersion conditions.
- Resistant to refined products and petroleum derivatives: kerosene, petrol, diesel, fuel oils…
- Resistant to solvents, salt water, and distilled water.
- Suitable for immersion at temperatures up to 90°C and vapours up to 200°C.
- Very good chemical resistance to a wide range of chemical agents: oils and greases, fuels, dilute acids and bases, saline solutions, solvents, etc.
- Excellent adhesion on concrete and metal surfaces.
- Applicable in high thicknesses in one single coat by air-less spraying.
- High abrasion and wear resistance.
- Non-toxic, solvent-free and non-flammable. Suitable for poor ventilated working areas.

APPLICATION INSTRUCTIONS

Surface preparation

Metal surfaces

Prepare the surface by shot blasting or high-pressure sandblasting to achieve a preparation grade of Sa 3 or Sa $2^{1/2}$ (ISO 8501/1 or SIS055900). Remove all traces of corrosion and obtain a dry substrate free of coatings, paint, grease, dust, contaminants or loose particles.

Concrete surfaces

Concrete surface must be solid, firm, rough and healthy, without bad adhered parts, surface laitance and as uniform as possible. Must be clean, free of paints, efflorescences, loose particles, greases, deform oils, dust, plaster, etc., or other substances that could affect the adhesion of the product.

There must not exists capillary rising moisture. Surface humidity should not exceed 4 %. Consult our technical note *Preparation of concrete surfaces for application of epoxy base coatings* for further information.

Honeycombs, voids and cracks without movement, once opened and boxed up to a minimum depth of 2 cm, will be repaired with a ***MAXREST®*** structural repair mortar (Technical Bulletin No. 2). Exposed rebars and metal elements should be cleaned and passivated with ***MAXREST® PASSIVE*** (Technical Bulletin No. 12). Surface and non-structural irons will be cut up to a depth of 2 cm and covered with structural repair mortar.

Expansion joints and fissures subjected to movements, once prepared and cleaned, will be treated with a suitable sealer from the ***MAXFLEX®*** range.

Primer

Metal surfaces

Apply a primer coat with zinc-rich anti-corrosive epoxy ***MAXEPOX® AC*** (Technical Bulletin No. 121) or with water-based epoxy ***MAXEPOX® PRIMER -W*** (Technical Bulletin No. 372), with an estimated consumption of 0,25-0,30 kg/m^2 depending on the surface porosity.

Concrete surfaces

On porous substrates, it is recommended to apply a primer layer of ***MAXEPOX® PRIMER*** (Technical Bulletin No. 174) or ***MAXEPOX® PRIMER -W*** (Technical Bulletin No. 372) with an estimated consumption of 0,25-0,30 kg/m². Before the application of ***MAXEPOX® NOVOLAC***, the primer must be dry to the touch, which will be 12-24 hours after application, depending on the ambient temperature and humidity.

On substrates with a moisture content higher than 10%, use special primers such as ***MAXPRIMER® WET*** (Technical Bulletin No. 496) or ***MAXEPOX® PRIMER WET*** (Technical Bulletin No. 534).

Mixing

MAXEPOX® NOVOLAC is supplied in pre-weighed sets. The hardener, component B, is poured into the resin, component A. In order to ensure the proper reaction of the two components make sure all of component B is added. The mixture can be done manually or better using a low-speed drill (300 rpm maximum), until achieving a homogeneous product in colour and appearance. Do not mix for prolonged period nor use high-speed mixer, which may heat the mixture or introduce air bubbles.

Verify the pot life after mixing in the Technical Data. At 20ºC pot life for application is 30 minutes.

Application

Apply ***MAXEPOX® NOVOLAC*** (A+B) using a brush or roller, in two or three coats (vertical surfaces) with a minimum time lapse between coats of 12 hours and maximum of 24 hours. Apply an estimated consumption of 0,40-0,50 kg/m² per coat. When applied using an airless spray gun, it can be applied in a single coat with a thickness of up to 1 mm.

Anti-slip surface. Apply a first coat of ***MAXEPOX® NOVOLAC*** (A+B) and while the coat is still fresh, broadcast dry and clean silica sand ***(DRIZORO® SILICA 0308*** or ***DRIZORO® SILICA 0204)*** and with a coverage of 1,0-1,5 kg/m^2. Once it is dry (approximately 24 hours after its application depending on ventilation and environmental conditions) sweep and vacuum surface to remove excess sand. Then, apply a second coat of pure ***MAXEPOX® NOVOLAC*** as topcoat.

Application condition

Optimum working temperature range is expected between 10°C and 30°C. Do not apply if substrate and/or ambient temperature is below 8°C or lower temperatures are expected within first 24 hours after the application. Applications above 30°C could produce an increase of reactivity of the product and overheating of the mixture, which will decrease the pot life of the mixture. Environmental and substrate temperature must be 3°C higher than dew point. Do not apply when relative humidity value exceeds 85 %. In case of lower temperatures or higher relative humidity conditions,

appropriate conditions must be provided by renewable hot air.
Do not apply if contact with water, moisture or condensation is expected within next 24 hour after the application.

Curing
Curing time for permanent immersion conditions, flooding test or putting into service is 7 days at 20ºC and 50 % R.H. Lower temperature and higher R.H increase curing time.
Consult the technical data table for other application and curing temperatures.

Cleaning
All tools and equipment must be cleaned with ***MAXEPOX® SOLVENT*** immediately after their use. Once it hardens, product can only be removed by mechanical methods.

CONSUMPTION

It requires an approximate total consumption between 1,0–1,2 kg/m^2 to achieve a recommended total thickness of minimum 400 microns and maximum 1 mm. In air-less spray applications, the application can be carried out in a single coat.
Consumption may vary depending on porosity and substrate conditions, a preliminary test on-site will determine consumption exactly.

IMPORTANT INDICATIONS

- Do not apply outdoors, for indoor use only.
- Do not apply over substrates subjected to ascendant capillary moisture or negative hydrostatic pressure. Surface humidity must be below 4%.
- Allow new concrete and mortar to dry 28 days before application.
- Allow the substrate to dry after rainfalls, dew, condensation or any situation which can increase the content of water as weather inclemency or substrate cleaning.
- Do not apply when relative humidity value is above 85 %. It could stop the curing process of the product, as disturb final colour as well.
- Do not add cements, solvents or any non-specified additive to the mixture.
- Respect mixing ratios of components.
- Do not exceed recommended coat thicknesses.
- Respect the expansion joints of the substrate and seal them properly with a product from the ***MAXFLEX*** range.
- For any other use not specified in this Technical Bulletin or further information, consult our Technical Department.

PACKAGING

MAXEPOX® NOVOLAC is supplied in pre-weighed sets of 15 liters (10 liters of component A and 5 liters of component B). It is available in grey, red, white and cream color.

STORAGE

Twelve months in its original unopened set, in a dry and covered place at temperatures above 5ºC and below 30ºC. Protect against direct sunlight and frost. Temperatures below 5ºC lead the crystallisation of the product. Should this happen, it must be heated slowly while is regularly stirred until achieving its homogeneous and original lump-free conditions.

SAFETY AND HEALTH

MAXEPOX® NOVOLAC is not a toxic product, but skin and eye contact must be avoided. When mixing and applying, do not work without the protection of rubber gloves and safety goggles. In case of eye contact, rinse immediately with clean water but do not rub. In case of skin contact, washing affected area with abundant water and soap. If irritation persists, seek medical assistance. If ingested, seek immediate medical assistance. Not induce vomiting.

Do not breathe vapours produced by heating or combustion. Observe the usual precautions necessary for the application of this type of product.

It is available Safety Data Sheet of ***MAXEPOX® NOVOLAC*** by request.

Disposal of the product and its empty packaging must be made by the final user according to official regulations.

TECHNICAL DATA

Product characteristics	
CE Marking, EN 1504-2 Description. Phenolic epoxy coating (Novolac) for protection of concrete. Coating (C). Principles / Methods. Protection against ingress with coating (1/1.3) and Moisture control with coating (Principle 2/2.2)	
General appearance and colour for component A	Homogeneous pigmented paste
General appearance and colour for component B	Yellow clear liquid
Mixing ratio for A:B mixture, (by weight)	2:1
Solid content for A+B mixture, (%, by weight)	100
Density for component A, (g/cm^3)	1,48 ± 0,1
Density for component B, (g/cm^3)	1,31 ± 0,1
Density for A+B mixture, (g/cm^3)	1,40 ± 0,1
Application and curing conditions	
Temperature / Relative Humidity, (ºC / %)	10 – 30 / < 85
Pot life at 10ºC / 20ºC / 30°C, (min)	45 / 30 / 10
Drying time to touch at 10ºC / 20ºC / 30°C, (h)	48 / 18 / 10
Minimum / Maximum waiting time between coats at 20°C, (h)	12 / 24
Total curing time at 10ºC / 20ºC / 30°C, (days)	14 / 7 / 4
Cured product characteristics	
Adhesion on concrete 28 days, EN 1542 (MPa)	3,8
Capillary absorption and permeability to water, EN 1062-3, w (kg(m^2·h^{0,5})	0,00011
Permeability to CO2, CO_2, EN 1062-6. S_D (m)	523
Permeability to water vapour, EN ISO 7783-1/-2. Classification V (g/m^2·d) / S_D (m)	0,8 / 27,7
Slip/skid resistance value, UNE-ENV 12633	Class 3
Temperature resistance in immersion (ºC)	90
Temperature resistance in vapour (ºC)	200
Thickness / Consumption*	
Waterproof and protective coating: - Consumption per coat / total application, (kg/m^2) - Thickness per coat / total application, (µm)	 0,40 – 0,50/ 1,0 - 1,2 400 / 1000

* 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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