MAPECOAT TNS URBAN

Acrylic resin-based coloured coating in water dispersion, with selected fillers, for coating cycle lanes, pedestrian and urban design areas

CE
EN 1504-2

IN COMPLIANCE WITH EUROPEAN STANDARD
EN 1504-2 (C)
PRINCIPLES
PI-MC-PR-RC-IR
MAPEI
SURFACE PROTECTION SYSTEMS FOR CONCRETE

DESCRIPTION

Mapecoat TNS Urban is an acrylic resin in water dispersion with selected fillers specifically formulated in MAPEI Research & Development laboratories for coating and protecting cycle lanes, pedestrian and urban design areas.

WHERE TO USE

· Coating bitumen and cementitious substrates.
· Protecting and colouring bitumen or cementitious surfaces subjected to a high level of footfall.
· Protecting and colouring bitumen or cementitious surfaces on cycle lanes and pedestrian areas.
· Protecting and colouring bitumen or cementitious surfaces in stadiums or sports facilities in general.
· Protecting and colouring bitumen or cementitious surfaces that need to have a high level of slip-resistance, including in wet weather conditions.
· Protecting and marking out the surface of access/exit routes, such as outdoor stairs or concrete ramps.
· Coating and colouring MAPEI waterproofing systems subjected to a high level of footfall.
· Colouring and protecting concrete architectural elements.

TECHNICAL CHARACTERISTICS

Mapecoat TNS Urban is a coating product for external use made from a balanced mix of acrylic resins in water dispersion and selected fillers. Thanks to its excellent physical and mechanical properties, it may be used to colour and protect bitumen and cementitious surfaces.
Thanks to the specially selected fillers used to formulate **Mapecoat TNS Urban**, it may be used as a finishing coat on external surfaces both on old surfaces which are already painted and on new surfaces which require painting. Unlike conventional colouring systems, **Mapecoat TNS Urban** technology, thanks to its specifically selected micro-fillers, when used as a finishing coat, it protects bitumen or cementitious surfaces from wear, providing at the same time a high level of slip-resistance.
Mapecoat TNS Urban is particularly suitable for protecting substrates: in fact, in the case of concrete flooring, the coloured coating limits the effect of agents that could damage or deteriorate the surface, such as carbon dioxide and moisture, thereby making the structure more durable. **Mapecoat TNS Urban** is tested in a Weather-Ometer to simulate severe physical and environmental cycles and is able to resist prolonged exposure to sunlight, particularly ultra-violet rays. From an aesthetic point of view, the wide range of colours available, along with other shades using the **ColorMap** automatic colouring system, which means personalised colours may also be created.
Mapecoat TNS Urban complies with the principles defined in EN 1504-9 ("*Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and evaluation of conformity. General principles for the use and application of systems*"), and the requirements of EN 1504-2 ("*Protection systems for concrete surfaces*") for class: coating (C) – protection against against ingress (ZA.1d) + moisture control (2.2) and increasing resistivity (8.2) (ZA.1e) + physical resistance (5.1) (ZA.1f).

RECOMMENDATIONS

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Even though **Mapecoat TNS Urban** is water-tight, it is not a membrane and, therefore, it must not be considered as a substitute for traditional waterproofing products (cementitious-based, bitumen-based or polyurea-based) normally used to waterproof horizontal and vertical surfaces. If surfaces need waterproofing, it is recommended to contact MAPEI Technical Services prior to applying this coloured finishing product for information on the correct application method.
Mapecoat TNS Urban is compatible with MAPEI traditional waterproofing systems, but always check with MAPEI Technical Services what measures need to be taken before applying the final coating. **Mapecoat TNS Urban** may be applied over coatings: in such cases the condition of the old coating will need to be checked beforehand, such as its adhesion and its compatibility with **Mapecoat TNS Urban**, by testing it on a small area of the coating. If tests show the old finish is suitable for recoating, the surface must be prepared adequately by washing it with a degreasing product and by lightly sanding to make the surface as rough as possible before applying **Mapecoat TNS Urban**. It is recommended to contact our **Sports System Technology** department to check and discuss how to use **Mapecoat TNS Urban** correctly, based on local conditions and type of substrate.

- Do not dilute **Mapecoat TNS Urban** with solvent.
- Do not apply **Mapecoat TNS Urban** directly on dusty, crumbling or weak surfaces.
- Do not apply **Mapecoat TNS Urban** on substrates with oil or grease stains or with stains in general.
- Do not use **Mapecoat TNS Urban** directly on substrates with water in hydrostatic pressure. In such cases the surface needs to be treated with a suitable product and only after treating the surface should the possibility of applying **Mapecoat TNS Urban** be assessed.
- **Mapecoat TNS Urban** may only be applied over other finishing products after carefully checking the state of the old layer and after carrying out preliminary tests to verify their compatibility and that there is good adhesion between the old finishing product and **Mapecoat TNS Urban**.

APPLICATION PROCEDURE

Preparation of the substrate

Substrates on which **Mapecoat TNS Urban** is to be applied must be compact, strong and flat and have no detached or loose areas. The application surface for the coating in particular must be strong enough to withstand the loads acting on the surface when in use, particularly surfaces used regularly or only occasionally by vehicles. New surfaces requiring treatment, or areas patched up with repair mortar, must be well-cured, perfectly clean, compact and dry.
Mapecoat TNS Urban must only be applied on substrates with a level surface. Taking such precautions during the preparation phase allows its consumption rate per square metre to be kept under control and also prevents unsightly defects forming on the surface. Lastly, to complete preparation of the substrate before applying **Mapecoat TNS Urban**, cementitious substrates must be dry before treating them with a suitable adhesion promoter, such as **Mapecoat TNS Primer EPW** diluted 1 : 0.5 with water. In the case of concrete substrates with up to 6% of residual moisture, it is recommended to treat the surface with a suitable chemical barrier, such as **Triblock P** three-component epoxy-cementitious primer, prior to applying the product. Apply the first coat of **Mapecoat TNS Urban** within 24 hours of applying **Mapecoat TNS Primer EPW** or within 36 hours if a **Triblock P** chemical barrier has been applied.
In the case of substrates made from bitumen conglomerate, the surface must be clean, there must be no loose material and there must be no traces of oil, fuel or any other material or substance that could affect the soundness of the substrate.
In the case of particularly deteriorated or dirty areas of asphalt, it may be necessary to remove these areas and then repair them with **Mape-Asphalt Repair 0/8** cold-applied reactive asphalt. Then, before applying **Mapecoat TNS Urban**, any traces of dust or dirt on the surface must be vacuumed off or removed. Before applying **Mapecoat TNS Urban**, substrates made from bitumen conglomerate must be cured and oxidised for at least 15 days.
Mapecoat TNS Urban may be applied also as coloured coating on **Mapecoat TNS White Base Coat** or **Mapecoat TNS Grey Base Coat** previously applied on bitumen or cementitios substrates.

Preparation of the product

Mapecoat TNS Urban may be diluted with 5-15% (maximum) of water, depending on surrounding weather conditions at the time of application. Mix the product thoroughly before use. where possible, use a drill at low-speed but take care to avoid entraining air into the product.

Application of the product

Mapecoat TNS Urban may be applied with a rubber or steel trowel, by roller or spray using a HVLP (High Volume Low Pressure) system. This system generally involves applying 2 coats of **Mapecoat TNS Urban**, waiting 12-24 hours between each coat in ordinary conditions. As soon as the surfaces have been coated they should be protected from rain to prevent **Mapecoat TNS Urban** coming into contact with water during its initial drying phase, otherwise its adhesion and the overall quality of the work may be affected.
The application method has an impact on the surface roughness of the finish: by way of example, application by roller or spray is recommended when a rougher surface is required, while application by rubber or metal trowel is recommended when a smoother surface is needed, while maintaining a high level of slip-resistance.

PRECAUTIONS TO BE TAKEN DURING PREPARATION AND APPLICATION

- Do not apply **Mapecoat TNS Urban** if it is about to rain or in windy weather.

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· Do not apply **Mapecoat TNS Urban** on damp or wet surfaces; it may not adhere correctly.
· Do not apply if the temperature is lower than +10°C or higher than +35°C.
· Do not apply when humidity is above 85%.

CLEANING

Clean tools used to apply **Mapecoat TNS Urban** with water before it dries.

CONSUMPTION

The consumption rate of **Mapecoat TNS Urban** is heavily influenced by the absorption, porosity and type of substrate and by the application method used. For even surfaces, the average consumption rate for trowel-applied product is as follows:
· bitumen conglomerate (wear layer) - approx. consumption 1.50 kg/m² applied in two coats;
· smooth concrete and non-absorbent surfaces - approx. consumption 1.00 kg/m² applied in two coats.

PACKAGING

Mapecoat TNS Urban is supplied in 20 kg plastic tubs.

STORAGE

24 months in a dry place away from sources of heat at a temperature of between +5°C and +30°C. Protect from frost.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values) **Complies with the following standards:** **– product certified according to EN 1504-2 surface protection systems for concrete), 2+ and 3 compliance certification system** **– Class according to EN 1504-2: products for protecting surfaces - coating - protection against the risk of penetration (1.3) (ZA.1d) + moisture control (2.2) and increase in resistivity (8.2) (Za.1e), physical resistance (5.1) (ZA.1f), chemical resistance (6.1) (ZA.1g) (C, principles PI - MC - PR - RC - IR)**	
PRODUCT IDENTITY	
Consistency:	thick liquid
Colour:	white or various colours using the **ColorMap®** automatic colouring system
Density (EN ISO 2811-1) (g/cm³):	approx. 1.43
Dry solids content (EN ISO 3251) (%):	approx. 71
APPLICATION DATA	
Dilution rate:	5-15% maximum of water
Recoat time:	12- 24 hours depending on humidity and temperature conditions, and in all cases, only when the previous coat is completely dry
Application temperature:	from +5°C to +35°C

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Consumption (kg/m²):	– bitumen conglomerate (wear layer) - approx. consumption 1.50 kg/m² applied in two coats; – smooth concrete and non-absorbent surfaces - approx. consumption 1.00 kg/m² applied in two coats
FINAL PERFORMANCE	
VOC content of ready-mixed product (coloured) (European Directive 2004/42/EC) (g/l):	≤ 50
Slip-resistance (EN 13036-4), on wet surface:	≥ 55 (class III for exterior use, according to EN 1504-2)
Abrasion resistance (EN ISO 5470-1), H22 disk, weight 1000 g, 1000 cycles (g):	< 1.5
Capillary action water absorption W_{24} [(kg/(m²·h$^{0.5}$)] (UNI EN 1062-3):	< 0.1
Crack resistance - static crack bridging (EN 1062-7):	class A4 (> 1.25 mm)
Crack resistance - dynamic crack bridging (EN 1062-7):	class B 4.1
Resistance to fuels (UNICHIM N. 394 par. 6.4), test report ANAS 2133/0359/11:	no defects
Resistance to lubricants (UNICHIM N. 394 par. 6.3), gearbox oil, test report ANAS 2133/0359/11:	no defects
Resistance to saline solutions (UNICHIM N. 394 par. 6.2), NaCl and $CaCl_2$ saturated solutions, test report ANAS 2133/0359/11:	no defects
Skid resistance (sliding) (UNI EN 1436), test report ANAS 2133/0359/11, BPN:	62 (class S4 (SRT ≥ 60))

PERFORMANCE CHARACTERISTICS FOR CE CERTIFICATION ACCORDING TO EN 1504-2, COMPLIANCE CERTIFICATION SYSTEMS 2+ AND 3 – CLASS ZA.1d + ZA.1e + ZA.1f + ZA.1g (C, principles PI – MC – PR – RC – IR)			
STANDARD	TEST	RESULTS AND COMPLIANCE WITH REQUIREMENTS	
EN 1062-6	permeability to CO_2	μ:	408,790
		s_D (m):	818
		dry thickness according to s_D (m):	0.002
		result/class:	compliant (s_D > 50 m)
EN ISO 7783	permeability to water vapour	μ:	1781
		s_D (m):	3.6
		dry thickness according to s_D (m):	0.002

		result/class:	I (s_D < 5 m)
EN 1062-3	capillary absorption and permeability to water	w [(kg/(m²·h$^{0.5}$)]:	0.02
		result/class:	compliant (w < 0.1)
EN 1062-11 4.1	thermal compatibility: ageing: 7 days at +70°C	result/class:	compliant (adherence ≥ 0.8 N/mm²)
EN 13687-1	thermal compatibility: freeze/thaw cycles with immersion in de-icing salts	result/class:	compliant (adherence ≥ 0.8 N/mm²)
EN 13687-2	thermal compatibility: storm cycles	result/class:	compliant (adherence ≥ 0.8 N/mm²)
EN 13687-3	thermal compatibility: thermal cycles without immersion in de-icing salts	result/class:	compliant (adherence ≥ 0.8 N/mm²)
EN 1062-7 (static)	crack resistance	crack bridging ability (µm):	2121
		result/class:	A4 (> 1.25 mm)
EN 1062-7 (dynamic)	crack resistance	result/class:	B4.1
EN 13687-5	resistance to thermal shock	result/class:	compliant (adherence ≥ 0.8 N/mm²)
EN 1542	direct tensile adherence test	result/class:	compliant (adherence ≥ 0.8 N/mm²)
EN 13501-1	reaction to fire	euroclass	B_{FL}-s1
EN 13036-4	slip resistance	result/class:	III, , external (> 55 units per test on wet surface)
EN 1062-11:2002 4.2	exposure to artificial atmospheric agents	result/class:	compliant
EN ISO 5470-1	abrasion resistance	Δ weight; H22 disk, 1000 cycles (g):	< 1.5
		result/class:	compliant (Δ weight < 3 g)
EN 13529 – group 3	chemical resistance – group 3 (oil / fuel)	result/class:	class II (28 days)
	hazardous substances	result/class:	compliant

OTHER PERFORMANCE CHARACTERISTICS

STANDARD	TEST	RESULTS	
UNI 7928	diffusion of chloride ions	penetration (mm):	0.0

WARNING

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Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.
Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

LEGAL NOTICE

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