MAPECOAT TNS RACE TRACK

Acrylic waterborne, rapid film-forming, coloured antislip coating for motorsport circuits

BENEFITS AND FEATURES

- FIA (Federation Internationale de l'Automobile) homologated
- FIM (Fédération Internationale de Motocyclisme) homologated
- EN 1504-2 certified, as Protective coating for concrete
- Water based one component coating
- Limitless colour range
- Rapid film forming
- High durability
- Protective coating for concrete end asphalt
- Abrasion resistance
- Chemical resistance fuel, oil, acid
- Spray application
- Slip resistance

DESCRIPTION

Mapecoat TNS Race Track is an acrylic waterborne, rapid film-forming coloured top-coating with selected fillers in water dispersion specifically formulated in MAPEI Research & Development laboratories and intended for motorsport circuits line marking. **Mapecoat TNS Race Track** is designed in strict accordance with safety requirements of the sport governing bodies and is granted homologation approval by both FIA (Federation Internationale de l'Automobile) and FIM (International Motorcycling Federation).

WHERE TO USE

- kerbs, starting grid, pit lane and edge line markings of racing circuits;
- painting of circuits run-off designs by a wide range of colors selection;
- painting of sponsor logos for circuits branding;
- temporary city circuits line markings.

TECHNICAL CHARACTERISTICS

Mapecoat TNS Race Track is an acrylic waterborne, rapid film-forming coloured antislip coating with superior physical and mechanical characteristics, which make it suitable for application over both concrete and asphalt surfaces subject to high traffic.
The taylor-made combination of selected fillers and high-performances acrylic compounds makes **Mapecoat TNS Race Track** specifically suitable for professional racing circuits, as it complies with safety standards required by both FIA (Federation Internationale de l'Automobile) and FIM (Fédération Internationale de Motocyclisme). Unlike commonly used colouring system, **Mapecoat TNS Race Track** technology leads to highly durable and non-slip surfaces also when in wet conditions. The film mechanical properties, combined with its high resistance to agents potentially harmful for the coating (such as oil, fuel and eventually de-icing salts, etc.), also make **Mapecoat TNS Race Track** a dedicated solution for those areas where both cars and motorbikes are frequently maneuvering and changing speed, such as paddock and pit lanes.

Mapecoat TNS Race Track is a protective coating for substrates: in fact, in case of brand-new concrete elements such as kerbs, the coloured coating strongly reduces the effect of agents that could damage or deteriorate the surface, such as carbon dioxide and moisture, thereby making the structure more durable. From an aesthetic point of view, the wide range of colours available, along with the limitless shades available using the **ColorMap** automatic colouring system, means that customized colours are available for any design. Besides, **Mapecoat TNS Race Track** is tested in a Weather-Ometer to simulate severe physical and environmental cycles (sun exposure, rain, temperature and humidity changes) and is able to resist prolonged sunlight exposure, particularly ultra-violet rays.
From an application point of view, **Mapecoat TNS Race Track** technology is fast film forming, so that surfaces may return to service very quickly (after around 15 minutes at+23°C and 50% R.H.)
Mapecoat TNS Race Track meets the main requirements of EN 1504-9 ("Products and system s for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity. General principles for the use of products and system s"), and the requirements of EN 1504-2 ("Surface protection system s for concrete") for the follow ing class: surface protection products – coating (C) – protection against ingress (ZA.1d) + moisture control (2.2), increasing resistivity (8.2) (ZA.1e), physical resistance (5.1) (ZA.1f), chemical resistance (6.1) (ZA.1g).

RECOMMENDATIONS

Mapecoat TNS Race Track may be applied directly on existing coatings: in such cases conditions, bond strength and compatibility of the old finish will need to be checked beforehand, by testing it on a small area of the existing coating. If tests show the old finish is suitable for recoating, the surface must always 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 Race Track**. It is recommended to contact the Sports System Technology department to check and discuss how to use **Mapecoat TNS Race Track** correctly, according to local application conditions and type of substrate.

- Do not dilute **Mapecoat TNS Race Track** with solvent.
- Do not apply **Mapecoat TNS Race Track** directly on dusty, crumbling or weak surfaces.
- Do not apply **Mapecoat TNS Race Track** on substrates with oil or grease stains or with stains in general.
- Do not apply **Mapecoat TNS Race Track** on surfaces with water under counter-pressure. In such cases, the substrate needs to be treated beforehand by using the most appropriate technical solutions and then checked to make sure **Mapecoat TNS Race Track** may be applied successfully.
- In case of application of **Mapecoat TNS Race Track** on cementitious substrates, such as brand-new concrete kurbs, a suitable primer must be used, i.e. **Mapecoat TNS Primer EPW**.

APPLICATION PROCEDURE

Preparation of the substrate

The substrate on which **Mapecoat TNS Race Track** is to be applied must be compact, strong and and have no detached or loose areas. New surfaces requiring treatment, or areas patched up with repair mortar, must be well cured, perfectly clean, compact and dry. Lastly, to complete preparation of the substrate, before applying

Mapecoat TNS Race Track, concrete structures need to be dry before treating them with a suitable adhesion promoter, such as **Mapecoat TNS Primer EPW** diluted 1 : 0.5 with water.
In case of substrates with residual moisture up to 3% use **Mapecoat TNS Primer EPW**. In case of residual moisture between 3 and 6% apply a suitable chemical barrier using **Triblock P** three-component epoxy cementitious primer. Apply the first coat of **Mapecoat TNS Race Track** after max. 24 hours from the application of **Mapecoat TNS Primer EPW**, after max 36 hours if the chemical barrier with **Triblock P** has been installed. Before applying **Mapecoat TNS Race Track**, any traces of dust or dirt on the surface must be vacuumed off or removed. In case of bitumen course, must be cured and oxidized for at least 15-20 days before applying **Mapecoat TNS Race Track**. It is strongly advisable to carefully wash out the new asphalt surface by water in order to remove any bitumen residuals, grease traces and dust before applying the paint.

APPLICATION METHODS FOR MOTOR RACING CIRCUITS

Preparation of the product

Mapecoat TNS Race Track may be diluted up to 10% with water, a quantity that varies depending on the air and substrate temperature, the method of application as well. It is recommended to thoroughly homogenize the product before use, using a low-speed drill, in order to avoid entraining air.

Product application

Mapecoat TNS Race Track may be applied with conventional roller techniques such as 5 mm (short nap roller). For large surfaces application, it is advisable to apply the coloured paint by spray using an airspray road-marking machine. The taylor-made designed rheology of the product, makes it specifically easy to spray and at the same time adequate for fine tuning the detailed graphics required. This system generally involves applying minimum 2 coats of **Mapecoat TNS Race Track**, waiting 2-4 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 Race Track** coming into contact with water during its initial drying phase, otherwise its adhesion and the overall quality of the work may be affected.

PRECAUTIONS TO BE TAKEN DURING PREPARATION AND APPLICATION

- Do not apply **Mapecoat TNS Race Track** if it is about to rain or in windy weather.
- Do not apply over wet surfaces or surfaces still damp after hydro-cleaning: adhesion of the **Mapecoat TNS Race Track** coating may be affected.
- Do not apply if the temperature is lower than +5°C or higher than +35°C. Do not apply if the temperature of the substrate is higher than +50°C. Do not apply if the level of relative humidity is higher than 85%.

CLEANING

Clean tools used to apply the product with water. Once dry, **Mapecoat TNS Race Track** may only be removed mechanically. Clean all tools and equipment thoroughly immediately after applying the product, particularly spray machines.

CONSUMPTION

Specific values for motor racing circuits:

- on bituminous conglomerate surfaces - 0.15-0.30 kg/m^2 per coat.
- on kerbs or concrete elements - 0.2-0.4 kg/m^2 per coat.

PACKAGING

Mapecoat TNS Race Track is supplied in 22 kg drums.

STORAGE

Mapecoat TNS Race Track remains stable for 12 months if stored in a dry place away from sources of heat at a temperature of +5°C to +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 standards (surface protection systems for concrete), 2+ and 3 compliance system:
– Class according to EN 1504-2: surface protection products – coating – protection against ingress (ZA.1d) + moisture control (2.2) and increasing resistivity (8.2) (ZA.1e), physical resistance (5.1) (ZA.1f), chemical resistance (6.1) (ZA.1g)

PRODUCT IDENTITY	
Consistency:	thick liquid
Colour:	white, from the colour chart range or in various colours obtained using the **ColorMap**® automatic tinting system
Density (EN ISO 2811-1) (g/cm³):	1.60 ± 0.05 (white)
Dry solids content (EN ISO 3251) (%):	76 ± 2 (white)

APPLICATION DATA			
Dilution rate (%):	0-10		
Surface drying time:	**+5°C and 80% R.H.** 30 minutes	**+23°C and 50% R.H.** 15 minutes	**+35°C and 80% R.H.** 15 minutes
Drying time (+20°C and 50% R.H. - ASTM D 711) according to FiA (Federation Internationale de l'Automobile):	< 20 minutes		
Application temperature (ambient, °C):	+5 to +35		
Consumption for application on motor racing circuits (kg/m²):	0.15-0.30 kg/m² per coat (bituminous conglomerate surface) 0.2-0.4 kg/m² per coat (on kerbs or concrete elements)		

FINAL PERFORMANCE	
VOC content of ready-mixed product (coloured) (European Directive 2004/42/EC) (g/l):	≤ 80

MAPEI SPORTS SYSTEM TECHNOLOGY

PERFORMANCE CHARACTERISTICS FOR CE CERTIFICATION ACCORDING TO EN 1504-2, SYSTEMS 2+ AND 3 - CLASS ZA.1d + ZA.1e + ZA.1f (C, principles PI - MC - IR - PR)			
STANDARD	**TYPE OF TEST**	**RESULTS AND COMPLIANCE WITH REQUIREMENTS**	
EN ISO 2409	**cross-cut**	result/class:	GT1, compliant (≤ GT2)
EN 1062-6	**permeability to CO_2**	μ:	529.363
		s_D (m):	66
		dry thickness according to s_D (m):	0.000125
		result/class:	compliant (s_D > 50 m)
EN ISO 7783	**permeability to water vapour**	μ:	6576
		s_D (m):	0.8
		dry thickness according to s_D (m):	0.000125
		result/class:	I (s_D < 5 m)
EN 1062-3	**capillary absorption and permeability to water**	w [kg/(m²$h^{0,5}$)]:	0.01
		result/class:	compliant (w < 0.1)
EN 1062-11 4.1	**thermal compatibility: ageing: 7 days at +70°C**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 13687-1	**thermal compatibility: freeze-thaw cycles with immersion in de-icing salts**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 13687-2	**thermal compatibility: storm cycles**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 13687-3	**thermal compatibility: thermal cycles without immersion in de-icing salts**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 13687-5	**resistance to thermal shock**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 1542	**direct tensile adherence test**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 13501-1	**reaction to fire**	euroclass:	B-s1, d0; 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):	< 0,5
		result/class:	compliant (Δ weight < 3 g)
EN ISO 6272-1	**impact strength**	result/class:	class I (≥ 4 Nm)
EN 13529 – group 3	**chemical resistance - group 3 (oils-fuel)**	result/class:	class II (28 days)

EN 13529 – group 11	**chemical resistance - group 11 (alkali)**	result/class:	class II (28 days)
EN 13529 – group 12	**chemical resistance - group 12 (salts)**	result/class:	class II (28 days)
EN 13529 – group 14	**chemical resistance - group 14 (surfractants)**	result/class:	class II (28 days)

WARNING

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

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.
The most up-to-date TDS can be downloaded from our website www.mapei.com.
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