MAPEI

CE
EN 1504-2

Mapecoat TNS Race Track

Acrylic waterborne, rapid film-forming, coloured coating to protect concrete and asphalt surfaces subject to a high level of footfall, including driveways

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

DESCRIPTION

Mapecoat TNS Race Track is an acrylic resin-based, rapid film-forming product with selected fillers in water dispersion specifically formulated in MAPEI Research & Development laboratories and is used to form a durable coating on floors subject to a high level of footfall and/or accessible to vehicles in sports facilities, such as stadiums.

WHERE TO USE

- Protecting and colouring the surface of concrete in areas subject to a high level of footfall, such as spectator stands in sports facilities.
- Protecting and colouring surfaces made from concrete, architectural decorative concrete, self-locking blocks.
- Protecting and marking out the surface of bitumen conglomerate, such as at racetracks.
- Protecting and marking out the surface of access/exit routes in sports facilities, such as ramps and parking areas.
- Colouring and protecting concrete architectural elements, such as kerbs on car and motorcycle racetracks.
- Marking out cycle lanes/tracks and pedestrian areas and areas accessible to light vehicles.
- Coating and colouring wet areas subjected to heavy footfall, such as around the edges of swimming pools.

TECHNICAL CHARACTERISTICS

Mapecoat TNS Race Track is an acrylic resin-based, rapid film-forming product with excellent physical and mechanical characteristics which make it suitable for colouring and protecting the surface of concrete and asphalt subject to a high level of footfall.
Thanks to the selected fillers used in its special formulation, **Mapecoat TNS Race Track** may be used as a finishing coat on external flooring requiring a high level of slip-resistance, such as access and exit routes in sports facilities in general (ramps, stairs, etc.). Unlike a simple colouring system, **Mapecoat TNS Race Track** technology allows highly durable, non-slip surfaces to be created that maintain their surface roughness over the years, including in wet conditions. The mechanical properties of the film, combined with its high resistance to agents potentially harmful for the flooring (such as de-icing salts, oil and fuel, etc.), also make **Mapecoat TNS Race Track** an excellent solution for coating large surfaces, such as those that need to be treated periodically to prevent ice forming and/or for routine cleaning purposes.

Mapecoat TNS Race Track 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. From an aesthetic point of view, the wide range of colours available, along with the other shades available using the **ColorMap** automatic colouring system, means that personalised colours may also be created. **Mapecoat TNS Race Track** is tested

Mapecoat TNS Race Track

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 application point of view, **Mapecoat TNS Race Track** technology contains special components in the product that help form a film very quickly, so that surfaces may be opened to foot traffic much sooner (after around 30 minutes in certain conditions) than with traditional acrylic systems.

Mapecoat TNS Race Track meets the main requirements of 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 of products and systems*"), and the requirements of EN 1504-2 ("*Surface protection systems for concrete*") for the following 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

Even though **Mapecoat TNS Race Track** is watertight, it is not a membrane and must not be considered as a substitute, therefore, 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 Race Track** is compatible with most of MAPEI's waterproofing systems but always check with Technical Services what measures need to be taken before applying the final coating.

Mapecoat TNS Race Track may be applied directly on existing coatings: in such cases the condition of the old finish will need to be checked beforehand, such as bond strength, and the compatibility of the old finish with **Mapecoat TNS Race Track** by testing it on a small area of the finish. 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 employing the most appropriate technical solutions and then checked to make sure **Mapecoat TNS Race Track** may be applied successfully.

APPLICATION METHOD

Substrate preparation

The substrate on which **Mapecoat TNS Race Track** 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 flooring when in service, 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. The coloured film of **Mapecoat TNS Race Track** must only be applied on substrates with a level surface. All sharp corners, the edges of steps and fillets must be rounded off. 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 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 the case of concrete substrates with up to 6% of residual moisture, it is recommended to treat the surface with a suitable chemical barrier prior to applying the product, such as **Triblock P** three-component epoxy-cementitious primer. Apply the first coat of **Mapecoat TNS Race Track** within 24 hours of applying **Mapecoat TNS Primer EPW** and within 36 hours of applying the **Triblock P** chemical barrier.
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 Race Track**, any traces of dust or dirt on the surface must be vacuumed off or removed. Before applying **Mapecoat TNS Race Track**, substrates made from bitumen conglomerate must be cured and oxidised for at least 15 days.

Preparation of the product

Dilute **Mapecoat TNS Race Track** with around 5-10% of water, depending on

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 colouring system
Density (EN ISO 2811-1) (g/cm^3):	1.60 ± 0.05 (white)
Brookfield viscosity (EN ISO 3219) (mPa·s):	8,000 ± 500 (rotor 4 - 10 rpm)
Dry solids content (EN ISO 3251) (%):	76 ± 2 (white)
APPLICATION DATA	
Dilution rate (%):	5÷10
Drying time (+23°C and 50% R.H.):	surface: 15 mins.
Drying time (+5°C and 80% R.H.):	surface: 30 mins.
Drying time (+35°C and 80% R.H.):	surface: 15 mins.
Application temperature (ambient, °C):	+5 to +35
Consumption (kg/m^2):	0.2 ÷ 0.4 each coat (for no adsorbing substrates, i.e. concrete)
FINAL PERFORMANCE	
VOC content of ready-mixed product (coloured) (European Directive 2004/42/EC) (g/l):	≤ 100
Slip-resistance (EN 13036-4), 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):	≤ 0.5
Absorption (UNI EN 1062-3) (kg/m^2·h$^{0.5}$)	< 0.01

the surrounding temperature and the temperature of the substrate. Mix the product well before use with a drill at low-speed, taking care to avoid entraining air into the product.

Application of the product
Mapecoat TNS Race Track may be applied using a traditional roller (type mohair 5). For large surface areas, the coloured coating may be applied more quickly using a HVLP (High Volume Low Pressure) mixed air spray system or membrane spraying system. This system generally involves applying minimum 2 coats of **Mapecoat TNS Race Track**, waiting 8-12 hours between each coat in normal 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 on 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 pumps.

CONSUMPTION

The consumption rate of **Mapecoat TNS Race Track** is heavily influenced by the absorption and roughness of the substrate and by the application method used.
For level, even substrates, the average consumption rate for roller-applied product is as follows:
– bitumen conglomerate (wear layer) - consumption of approx. 0.6-0.8 kg/m^2 for the first coat and 0.3-0.4 kg/m^2 for subsequent coats;
– smooth concrete and non-absorbent surfaces - consumption of approx. 0.2-0.4 kg/m^2 for each coat.
Apply minimum 2 coats.

PACKAGING

Mapecoat TNS Race Track is supplied in 20 kg plastic drums.

STORAGE AND DISPOSAL

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.

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. ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

All relevant references for the product are available upon request and from www.mapei.com

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/($m^2h^{0,5}$)]:	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/mm^2)
EN 13687-1	**thermal compatibility: freeze-thaw cycles with immersion in de-icing salts**	result/class:	compliant (adherence ≥ 1.5 N/mm^2)
EN 13687-2	**thermal compatibility: storm cycles**	result/class:	compliant (adherence ≥ 1.5 N/mm^2)
EN 13687-3	**thermal compatibility: thermal cycles without immersion in de-icing salts**	result/class:	compliant (adherence ≥ 1.5 N/mm^2)
EN 13687-5	**resistance to thermal shock**	result/class:	compliant (adherence ≥ 1.5 N/mm^2)
EN 1542	**direct tensile adherence test**	result/class:	compliant (adherence ≥ 1.5 N/mm^2)
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)
EN 1081	**hazardous substances**	result/class:	compliant

OTHER PERFORMANCE CHARACTERISTICS

STANDARD	TYPE OF TEST	RESULTS AND COMPLIANCE WITH REQUIREMENTS	
UNI 7928	**diffusion of chloride ions**	penetration (mm):	0.0

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SPORTS SYSTEM TECHNOLOGY