# MAPECOAT TNS RACE TRACK

**Acrylic waterborne, rapid film-forming, coloured coating intended for marking asphalt roadways of road racing circuits.**


## 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 for marking asphalt roadways of road racing circuits.

## WHERE TO USE

- Protecting and colouring the surface of concrete in areas subject to a high level of footfall.
- 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.
- Creating road markings on bituminous conglomerate surfaces for motor racing circuits.
- 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.

## 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.). The special formulation used to produce **Mapecoat TNS Race Track** enables all the approval and safety standards required by FIA (Federation Internationale de l'Automobile) and FIM (Fédératon Internationale de Motocyclisme) to be met regarding products used to mark out the road surface of motor racing circuits. 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.

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**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 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. **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.
- In case of application of **Mapecoat TNS Race Track** on cementitious substrates, a suitable primer must be used.

## APPLICATION PROCEDURE

### Preparation of the substrate

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. 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 application on concrete substrate, apply a suitable primer on the dry surface to grant the correct adhesion of **Mapecoat TNS Race Track**.
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** and after max. 36 hours if the chemical barrier with **Triblock P** has been carried out.
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 15-20 days.

## APPLICATION METHODS FOR MOTOR RACING CIRCUITS

When applying the product to mark out the road surface of motor racing circuits **the following must be adhered to in order to comply with FIA (Federation Internationale de l'Automobile) and FIM (International Motorcycling Federation) product approval requirements.**

### 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. 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 mohair. To mark out large surfaces more quickly, apply the coloured finish by spray using an airspray road-marking machine with variable-flow pump, a mixed HVLP (High Volume Low Pressure) air system or a diaphragm pump.
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

Specific values for motor racing circuits:

- on bituminous conglomerate surfaces - 0.15-0.30 kg/m² per coat.
- on kerbs or concrete elements - 0.2-0.4 kg/m² per coat.

## PACKAGING

**Mapecoat TNS Race Track** is supplied in 22 kg plastic drums.
240 kg metal drums can be supplied upon request.

## 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.

## 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.**<br>30 minutes | **+23°C and 50% R.H.**<br>15 minutes | **+35°C and 80% R.H.**<br>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)<br>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 |

**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) |

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|---|---|---|---|
| **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 |

## 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

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