MAPECOAT TNS FAST

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

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 Fast 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.
- 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.
- 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 Fast 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 Fast** 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 Fast** 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 Fast** 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 Fast 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

MAPEI SPORTS SYSTEM TECHNOLOGY

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 Fast** 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 Fast** 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 Fast 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 Fast** 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 Fast** 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 Fast 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 Fast** 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 Fast**. It is recommended to contact the **Sports System Technology** department to check and discuss how to use **Mapecoat TNS Fast** correctly, according to local application conditions and type of substrate.

- Do not dilute **Mapecoat TNS Fast** with solvent.
- Do not apply **Mapecoat TNS Fast** directly on dusty, crumbling or weak surfaces.
- Do not apply **Mapecoat TNS Fast** on substrates with oil or grease stains or with stains in general.
- Do not apply **Mapecoat TNS Fast** 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 Fast** may be applied successfully.

APPLICATION METHOD

Substrate preparation

The substrate on which **Mapecoat TNS Fast** 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. **Mapecoat TNS Fast** 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 the preparation of the substrate, in the case of concrete structures only, the surface must be treated with suitable mechanical equipment (e.g. shot-blasting machine or sander with diamond discs) in order to remove all traces of dirt and cement slurry, crumbling or detaching parts and make the surface slightly rough and absorbent. For cementitious conglomerate substrates, once dry, the surface needs to be treated with a suitable primer to ensure **Mapecoat TNS Fast** adheres correctly. For surfaces with a residual moisture content of up to 3%, use **Mapecoat TNS Primer EPW**. If the residual moisture content is between 3 and 6%, apply a chemical barrier consisting of **Triblock P** three-component, epoxy-cementitious primer. The first coat of **Mapecoat TNS Fast** must be

applied within 24 hours of applying **Mapecoat TNS Primer EPW** and within 36 hours of applying **Triblock P** chemical barrier.
Where required, repairs to concrete must be carried out using cementitious mortar from the **Mapegrout** line or with **Planitop**, according to the amount to be repaired and the loads acting on the floor. Substrates must be levelled off prior to applying **Mapecoat TNS Fast** to ensure it is applied evenly and homogeneously.
In the case of bituminous sublayers, fill and repair cracks with a reactive product such as **Ultrabond Turf 2 Stars Pro**, **Ultrabond Turf 2 Stars** or **Ultrabond Turf PU 2K**. For hollows up to 2 cm deep, we suggest using a balanced mix of the products mentioned above (**Ultrabond Turf**) and 15-20% in weight of dry silica **Quartz 0.9** sand.
Bituminous conglomerate substrates may also be treated with **Mapecoat TNS Fast** as soon as they have been applied, in which case the heat from the asphalt will dry the product more quickly, particularly when applied in cold weather. It is recommended to apply **Mapecoat TNS Fast** on bituminous conglomerate substrates with a maximum bitumen content of 6%; for higher levels of bitumen, contact our technical support team at Sports System Technology or the MAPEI Technical Services Division to verify and agree on the correct application of **Mapecoat TNS Extreme**, according to the condition of the substrate. **Mapecoat TNS Fast** may also be applied on the surface of old asphalt: in such cases, the surface must be cleaned with a high-pressure washer or ground before applying **Mapecoat TNS Primer EPW**.

Preparation of the product

Dilute **Mapecoat TNS Fast** is applied until 10% of water, depending on 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 Fast 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 Fast**, 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 Fast** 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 Fast** if it is about to rain or in windy weather.
- Do not apply on damp or wet surfaces after hydro-washing as it may compromise the adhesion of **Mapecoat TNS Fast** coating.
- Do not apply if the temperature is lower than +5°C or higher than +35°C.
- Do not apply if substrate temperature is higher than +50°C.
- Do not apply if the level of humidity is higher than 85%.

TECHNICAL DATA (typical values)

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/cm³):	1.60 ± 0.05 (white)
Dry solids content (EN ISO 3251) (%):	76 ± 2 (white)

APPLICATION DATA	
Dilution rate (%):	0÷10

MAPEI SPORTS SYSTEM TECHNOLOGY

Superficial drying time: **at +35°C - 80% U.R.:** **at +23°C - 50% U.R.:** **at +5°C - 80% U.R.:**	 30 minutes 15 minutes 15 minutes
Consumption (kg/m²):	0.2 ÷ 0.4 each coat (for no absorbing substrates, i.e. concrete)
VOC content of ready-mixed product (coloured) (European Directive 2004/42/EC) (g/l):	≤ 100

OTHER PERFORMANCE CHARACTERISTICS	
Barefoot slip resistance according to DIN 51097:	A+B+C
Slip resistance according to DIN 51130 DIN 51130:	R13

PERFORMANCE CHARACTERISTICS FOR CE CERTIFICATION ACCORDING TO EN 1504-2, SYSTEMS 2+ AND 3 - CLASS ZA.1d + ZA.1e + ZA.1f + ZA.1g (C, principles PI - MC - IR - PR)

STANDARD	TYPE OF TEST	TYPICAL VALUES AND COMPLIANCE WITH REQUIREMENTS	
EN ISO 2409	cross-cut	result/class:	GT1, compliant (≤ GT2)
EN 1062-6	permeability to CO_2	μ: s_D (m): dry thickness according to s_D (m): result/class:	529.363 66 0.000125 compliant (s_D > 50 m)
EN ISO 7783	permeability to water vapour	μ: s_D (m): dry thickness according to s_D (m): result/class:	6576 0.8 0.000125 I (s_D < 5 m)
EN 1062-3	capillary absorption and permeability to water	w [kg/(m²h^{0,5})]: result/class:	0.01 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): result/class:	< 0,5 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 (surfactants)	result/class:	class II (28 days)
EN 1081	hazardous substances	result/class:	compliant

CLEANING

Clean tools used to apply the product with water. Once dry, **Mapecoat TNS Fast** 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 Fast** 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/m² for the first coat and 0.3-0.4 kg/m² for subsequent coats;
– smooth concrete and non-absorbent surfaces - consumption of approx. 0.2-0.4 kg/m² for each coat.
Apply minimum 2 coats.

PACKAGING

Mapecoat TNS Fast is supplied in 20 kg plastic drums.

STORAGE AND DISPOSAL

Mapecoat TNS Fast 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.

09294-09-2023-gb

MAPEI
SPORTS SYSTEM TECHNOLOGY