MAPECOAT TNS FAST

Water-based, acrylic resin-based, 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

BENEFITS AND FEATURES

- Certified according to EN 1504-2 as surface protection for concrete
- Protection and colouring for both bituminous conglomerate and asphalt surfaces
- Certified anti-slip properties
- High resistance to wear
- Rapid film-forming
- Easy to apply by roller, metal trowel or rubber squeegee
- Suitable for spray application

DESCRIPTION

Mapecoat TNS Fast is an acrylic resin-based, rapid film-forming product with selected fillers in water dispersion specifically formulated in the Mapei Research & Development laboratories and is used to form a durable coating on floors subjected to a high level of footfall and light vehicle traffic.

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 the surface of concrete, decorative concrete and interlocking pavers.
- Protecting and colouring bituminous conglomerate surfaces.
- 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.
- Creation of cycle lanes/tracks and areas subject to light vehicular traffic.
- Coating and colouring of outdoor areas subject to heavy foot traffic, even in wet conditions, such as around swimming pools.

MAPEI SPORTS SYSTEM TECHNOLOGY

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 concrete and bituminous conglomerate surfaces subject to a high level of footfall.
Thanks to the selected fillers used in its special formulation, **Mapecoat TNS Fast** can be used as a finishing coat on external flooring that needs to have a high level of slip-resistance, such as access floors in public areas. Unlike simple colouring systems, **Mapecoat TNS Fast** technology creates highly durable, slip-resistant surfaces that maintain their roughness over time, even in wet conditions. The mechanical properties of the film, combined with its high resistance to chemical products potentially harmful to surfaces (such as de-icing salts, oil and fuel, etc.), make **Mapecoat TNS Fast** suitable for coating large areas that need to be treated periodically, for example to prevent ice formation and/or for routine cleaning purposes.
Mapecoat 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 dioxide and moisture, thereby making the structure more durable. From an aesthetic point of view, the wide range of colours available, combined with the additional shades that can be created using **ColorMap®** automatic colouring system, makes it possible to create custom colours on demand.
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 ultraviolet rays.
From an application point of view, **Mapecoat TNS Fast** technology contains special components that film very quickly, allowing surfaces to be opened to foot traffic much sooner (after approx. 30 minutes under certain conditions) than with traditional acrylic systems.
Mapecoat TNS Fast 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 of products and systems”), and the requirements of EN 1504-2 (“Surface protection systems for concrete”) for class: products for protecting surfaces – Coating (C) – protection against ingress (ZA.1d), moisture control (2.2), increasing resistivity (8.2) (ZA.1e), physical resistance (5.1) (ZA.1g), chemical resistance (6.1) (ZA.1g).

RECOMMENDATIONS

Even though **Mapecoat TNS Fast** is water-tight, 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 the traditional Mapei waterproofing systems, but always check with Mapei Technical Services what measures need to be taken before applying the final coating.
Mapecoat TNS Fast can be applied over existing coatings: in such cases, the condition of the old coating will need to be checked beforehand, such as its adhesion, as well as its compatibility with **Mapecoat TNS Fast**.
To this end, it is recommended to test it on a small area of the coating. If tests show that the old finish is suitable for recoating, the surface must be adequately prepared 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 our **Sports System Technology** Service to check and discuss how to use **Mapecoat TNS Fast** correctly, based on local conditions and type of substrate.

- Do not dilute **Mapecoat TNS Fast** with solvents.
- 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 dirt in general.
- Do not apply **Mapecoat TNS Fast** on surfaces where water in counter-pressure is present. In such cases, the substrate must be pre-treated using the most appropriate technical solutions and then checked to ensure that **Mapecoat TNS Fast** can be applied.

APPLICATION PROCEDURE

Preparation of the substrate

Substrates 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 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 Fast** must only be applied on substrates with a level surface. All sharp corners, the edges of steps and fillets must be rounded off (for example, in the case of stadium stairs). Taking such precautions during the preparation phase allows the consumption rate per square metre to be kept under control and also prevents unsightly defects forming on the surface. Finally, to complete the substrate preparation, only in the case of concrete structures, the surface must be treated with suitable power tools (e.g. shot-blasting or grinding with a diamond disk) to remove all traces of dirt, cement laitance and crumbling or detached portions and to make the surface slightly rough and absorbent. In the case of cement conglomerate substrates, in order to grant the correct adhesion of **Mapecoat TNS Fast**, a suitable primer must be applied on the dry substrate. 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 Fast** 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. Any cracks in the substrate must be repaired before the applications using **Eporip** epoxy resin. If necessary, the repair concrete portions should be carried out with cement mortars from the **Mapegrout** or **Planitop** ranges. Select the most suitable product according to the reparation needs and the loads to which the flooring will be subject. **Mapecoat TNS Fast** must be applied on a levelled substrate, so that it can be applied evenly and uniformly.
In the case of substrates made of 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. Cracks must be filled and repaired using reactive products 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 a balanced mix of the products mentioned above (**Ultrabond Turf**) and 15-20% by weight of **Quartz 0.9** silica sand.
In the case of particularly deteriorated or dirty areas of asphalt, it could be necessary to remove these areas and then repair them with **Mape-Asphalt Repair 0/8** cold-applied reactive asphalt. **Mapecoat TNS Fast** can also be applied to freshly laid bituminous conglomerate substrates, allowing the heat from the asphalt to dry the product even faster. This is particularly effective when applied in cold weather. It is recommended that Mapecoat TNS Fast is applied to bituminous conglomerate substrates with a maximum bitumen content of 6%. For higher bitumen contents, contact the Sports System Technology Service or MAPEI Technical Service to verify and possibly to advise on the correct application of Mapecoat TNS Fast, depending on the local conditions of the substrate. **Mapecoat TNS Fast** can also be applied on old asphalt surfaces: in such cases, make sure the surface is prepared in a suitable way (by water jet or grinding). Evaluate beforehand if **Mapecoat TNS Primer EPW** should be applied.

Preparation of the product

Dilute **Mapecoat TNS Fast** with max. 10% of water. Dilution rate will vary depending on surrounding temperature and substrate temperature. 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 can be applied with 5-10 mm mohair-type roller, using conventional techniques. For large surface areas, the coloured coating can be applied more quickly using a HVLP (High Volume Low Pressure) air mix spray system or a membrane pump. This system generally requires the application of 2 coats of **Mapecoat TNS Fast**, with a waiting time of 8–12 hours between each coat under normal humidity and temperature 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 could 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 wet surfaces or surfaces still damp after hydro-cleaning: adhesion of the **Mapecoat TNS Fast** coating may be affected.
- Do not apply at temperatures below +5°C or above +35°C. Do not apply if substrate temperature exceeds +50°C. Do not apply when relative humidity exceeds 85%.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Consistency:	thick liquid
Colour:	white or various colours 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 (%):	beetween 0 and 10
Surface drying time:	
- at +35°C - 80% R.H.:	15 min.
- at +23°C - 50% R.H.:	15 min.
- at +5°C - 80% R.H.:	30 min.
Consumption (kg/m²):	between 0.2 and 0.4 per coat (on non-absorbent substrate, e.g., concrete)
VOC content of ready-mixed product (coloured) (European Directive 2004/42/EC) (g/l):	≤ 100

OTHER PERFORMANCE CHARACTERISTICS	
Slip resistance (barefoot) in compliance with DIN 51097:	A+B+C
Slip resistance in compliance with DIN 51130:	R13
Dynamic friction coefficient:	
- rubber, dry surface (μ):	0.83
- rubber wet surface (μ):	0.77
- leather, dry surface (μ):	0.45
- leather, wet surface (μ):	0.70

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 - PR - RC - IR)

STANDARD	TEST	TYPICAL VALUES AND COMPLIANCE WITH REQUIREMENTS

EN ISO 2409	**Cross-cut test**	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/(m²·h$^{0.5}$)]: 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 cycling with de-icing salt immersion**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 13687-2	**thermal compatibility: thunder-shower cycling**	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 temperature shock**	result/class:	compliant (adherence ≥ 1.5 N/mm²)
EN 1542	**bond strength by pull-off**	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 disk weight H22, 1000 cycles (g): result/class:	< 0,5 compliant (Δ weight < 3 g)
EN ISO 6272-1	**impact resistance**	result/class:	class I (≥ 4 Nm)
EN 13529 – group 3	**chemical resistance - group 3 (oil / 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** can 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. The approximate consumption rate for application with a roller on an even, regular surface is as follows:
- bituminous conglomerate surface: consumption approx. 0.6-0.8 kg/m² for the first coat and 0.3-0.4 kg/m² for subsequent coats;
- smooth concrete surface or non-absorbent surfaces: approx. 0.2-0.4 kg/m² per coat.
Apply at least 2 coats.

PACKAGING

Mapecoat TNS Fast is supplied in 20 kg plastic buckets.

STORAGE

Mapecoat TNS Fast remains stable for 12 months if stored in a dry place away from sources of heat at a temperature 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 SDS 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.
Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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